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XLIV.—*Descriptions of New Pyralidæ of the Subfamilies
Crambinæ and Siginæ.* By SIR GEORGE F. HAMFSON,
Bart., F.Z.S., &c.

[Continued from p. 292.]

(169 d) *Crambus acyperas*, sp. n.

♀. Head white with a dorsal brown streak; antennæ fuscous; sides of frons, maxillary palpi at base, and palpi except above towards tips brown; thorax cupreous with a dorsal white stripe; abdomen white suffused with brownish ochreous; legs suffused with brown. Fore wing cupreous rufous; a silvery white fascia from base through the cell confluent with an oblique wedge-shaped mark from apex, defined above and below by dark streaks; a silvery white fascia from base of inner margin to termen at vein 1, defined below by a dark streak and leaving some rufous on inner margin except towards base; an indistinct curved rufous subterminal line defined on outer side by silvery whitish, interrupted by the white fascia, the area beyond it whitish finely pencilled with brown and with blackish streaks in the interspaces from below the fascia to below vein 2; the apex strongly produced and acutely falcate; cilia silvery white with some red-brown at tips. Hind wing silvery white faintly tinged with brown. Underside of fore wing and costal area of hind wing suffused with red-brown.

Hab. BR. E. AFRICA, Uganda Ry., Mile 478 (*Betton*), 5 ♀ type, E. Quaso (*Betton*), 1 ♀. *Exp.* 24–26 mm.

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(169 f) *Crambus chilianellus*, sp. n.

Head, thorax, and abdomen whitish suffused with red-brown, the head and thorax with some blackish scales; antennæ white tinged with cupreous brown; palpi, pectus, and legs suffused with cupreous brown. Fore wing white tinged with rufous; the costal edge black to end of cell; a silvery white fascia below medial part of costa; a silvery white fascia from base through the cell to termen where it is met by an oblique bar from apex, its terminal half defined above and below by slight dark streaks and with a fine black streak below it in submedian fold to end of cell; the apex strongly produced and acute; a fine black line on termen towards apex and minute black points below veins 5, 4, 3; cilia silvery white with a rufous line near base at middle and some rufous at tips. Hind wing silvery white tinged with brown, the cilia pure white. Underside of fore wing and costal area of hind wing suffused with red-brown except on terminal areas.

Hab. CHILL, Mulchen (*Elwes*), 1 ♂, 3 ♀ type. *Exp.* 30 mm.

(169 g) *Crambus vittiterminellus*, sp. n.

Head, thorax, and abdomen whitish suffused with cupreous brown; palpi and fore legs more fuscous brown. Fore wing whitish suffused with cupreous brown especially on costal area; a white fascia on median nervure from near base to the postmedial line, defined above and below by diffused blackish streaks; postmedial line slight, cupreous brown, very oblique from costa to discal fold at end of the fascia, then defining its lower edge to origin of vein 2 where it terminates; subterminal line cupreous brown defined on outer side by white, oblique to discal fold, then inwardly oblique and very slightly sinuous; an oblique wedge-shaped white mark from apex, then a series of minute elongate black spots defined by white to submedian fold; cilia silvery white with a cupreous line near base and some cupreous at tips. Hind wing silvery white tinged with brownish ochreous, the cilia pure white. Underside of fore wing and costal area of hind wing suffused with brown.

Hab. BR. C. AFRICA (*Coryndon*), 1 ♀, Mlanje Plateau, 6500' (*Neave*), 2 ♂, 3 ♀ type. *Exp.* 24 mm.

(173 a) *Crambus mesombrellus*, sp. n.

♂. Head and thorax pure white, the sides of palpi, tegulae, and patagia red-brown; abdomen white dorsally tinged with ochreous; fore legs red-brown in front. Fore wing silvery white; a diffused red-brown fascia in submedian fold to beyond end of cell. Hind wing silvery white tinged with reddish brown except on inner and terminal areas. Underside suffused with red-brown except on terminal areas.

Hab. N. NIGERIA, Borgu, Yelwa Lake (*Migeod*), 1 ♂ type. *Exp.* 24 mm.

(193 a) *Crambus peralbellus*, sp. n.

Head and thorax pure white; antennæ fulvous below; palpi with a fuscous band near extremity of 2nd joint and spot below 3rd; abdomen white, tinged with yellow towards base and brown towards extremity and on ventral surface; fore tibiæ and tarsi yellow, the tarsi black at extremities. Fore wing pure white, the costal edge brownish towards base; a slight fulvous yellow striga on upper discocellular, placed on a sinuous pale brown line with an orange-yellow mark before it on costa; an orange-yellow post-medial point on costa; subterminal line pale brown, excurved to vein 4, then incurved, a fine orange-yellow line beyond it from costa to vein 6; the termen with slight black strigæ from below apex to below vein 5 and three points between vein 4 and submedian fold; cilia metallic silver. Hind wing pure white with a slight brown terminal line. Underside of fore wing suffused with brown except on terminal area, a curved brown postmedial line.

Hab. GOLD COAST, Bibianaha (*Spurrell*), 5 ♂, 4 ♀ type, Kumasi (*Sanders*), 1 ♂; S. NIGERIA, Lagos (*Sir G. Carter*), 1 ♂. *Exp.* 16 mm.

(193 b) *Crambus argenticilia*, sp. n.

Head and thorax silvery white; abdomen white tinged with brown; antennæ brownish below; palpi with fuscous bands near extremity of 2nd joint and base of 3rd; fore legs suffused with golden cupreous, the tarsi banded with cupreous. Fore wing silvery white, the costal edge brownish to end of cell; a sinuous brown medial line with a black discoidal point on it; subterminal line pale brown, excurved to vein 4, then incurved, a small wedge-shaped rufous mark beyond it on costa, narrowing to a point at apex; a black-brown terminal line from just below apex to above tornus; cilia metallic silver with a golden tinge. Hind wing silvery white with a fine dark terminal line from just below apex to vein 2. Underside of fore wing suffused with brown except on inner and terminal areas, a curved brown postmedial line.

Hab. SIERRA LEONE, 1 ♂ type; GOLD COAST, Kumasi (*Sanders*), 2 ♀; S. NIGERIA, Yaba (*Simpson*), 1 ♀. *Exp.*, ♂ 14, ♀ 16 mm.

(193 d) *Crambus fulvinitellus*, sp. n.

♀. Head and thorax silvery white, the antennæ and palpi except above bright fulvous, the tegulæ with subdorsal bright fulvous stripes and the dorsum of thorax fulvous; abdomen white suffused with brown, the anal tuft bright fulvous at tips; fore tibiæ and tarsi and the mid and hind tarsi at extremities golden fulvous. Fore wing silvery white; the costa bright fulvous, expanding into a small triangular mark above end of cell and into a mark rounded below and bisected by a white striga towards apex, defined below by dark fulvous on terminal half; a small triangular fulvous spot at middle of inner margin with a streak beyond it on

the margin expanding into a slight tooth towards tornus; a rather lunulate deep fulvous terminal line; cilia bright fulvous with a deep fulvous line near base. Hind wing silvery white. Underside of fore wing white, the costal area tinged with brown except at apex.

Hab. LOUISIADES, St. Aignan (*Meek*), 3 ♀ type. *Exp.* 14 mm.

(201e) *Crambus endoxantha*, sp. n.

♂. Head and thorax fulvous yellow; antennae white tinged with yellow; abdomen white suffused with fulvous yellow towards base and on ventral surface; pectus and legs white, the tibiae and tarsi tinged with fulvous yellow. Fore wing with the costal area to discal fold bright rufous, the costal edge white; a silvery white fascia through the cell, ending rather diffusely before termen, the area below it fulvous yellow with a white streak defined above and below by dark scales along vein 2 to towards termen; the veins beyond upper angle of cell with slight pale streaks; a terminal series of slight dark points; cilia white mixed with some red-brown especially at middle. Hind wing silvery white with a faint yellowish tinge. Underside white, the fore wing and costal area of hind wing suffused with pale rufous.

Hab. TRANSVAAL, Pretoria (*Janse*), 1 ♂ type. *Exp.* 28 mm.

(204h) *Crambus leucorhabdon*, sp. n.

♀. Head, thorax, and abdomen grey-brown with a slight cupreous gloss, the head and prothorax with some white; pectus with some white. Fore wing grey-brown with a cupreous gloss; the costal edge white except towards base; a silvery whitish fascia through the cell, narrowing beyond the cell, then expanding towards termen to above vein 6, and whitish streaks on veins 5 to 2 and in basal half of submedian fold and terminal half of vein 1; a terminal series of slight dark points; cilia silvery white tinged with brown and with a slight brown line near base. Hind wing pale reddish brown, the cilia white with a brown line near base. Underside pale reddish brown.

Hab. U.S.A., Colorado, Florissant (*Cockerell*), 1 ♀ type. *Exp.* 38 mm.

(205b) *Crambus medifasciellus*, sp. n.

♀. Head and thorax cupreous brown, the vertex of head whitish; antennae brown; palpi dark brown mixed with white especially above; abdomen whitish suffused with rufous. Fore wing cupreous brown mixed with some white especially on inner medial area; a rather ill-defined white fascia along median nervure with a fine black streak below it, and slight whitish streaks on the veins beyond the cell defined by dark scales; some indistinct blackish points before and beyond end of cell; a curved subterminal series of blackish points on the inner side of a whitish line with a slight yellowish shade before it; a terminal series of black points; cilia

white tinged with brown and with a fine brown line near base. Hind wing white with a faint red-brown tinge. Underside of fore wing and costal area of hind wing suffused with reddish brown.

Hab. BR. E. AFRICA, Nairobi (*Anderson*), 2 ♀ type, Kabeta (*Anderson*), 1 ♀. *Exp.* 22 mm.

(205 c) *Crambus atratellus*, sp. n.

♀. Head and thorax black-brown with a silvery leaden gloss; abdomen dark reddish brown; pectus and legs dark reddish brown. Fore wing dark cupreous brown with a silvery leaden gloss; an indistinct dark discoidal spot; a terminal series of small rather triangular black spots; cilia glossed with silver and with a dark line near base. Hind wing greyish suffused with cupreous brown; a fine dark terminal line and line near base of cilia. Underside greyish suffused with cupreous brown, the costal area of fore wing darker.

Hab. BRAZIL, Castro Paraña (*D. Jones*), 1 ♀ type. *Exp.* 26 mm.

(206 a) *Crambus argyrostola*, sp. n.

♀. Head, thorax, and abdomen pure white; palpi at sides, antennæ, and legs pale yellowish brown; wings silvery white. Fore wing irrorated with a very few black scales; the base of costa blackish; two black points on termen above, tornus; the apex produced and acute. Underside of fore wing suffused with fuscous to beyond middle.

Hab. NATAL, Karkloof (*Marshall*), 1 ♀ type. *Exp.* 36 mm.

(206 c) *Crambus neuirellus*, sp. n.

♀. Head, thorax, and abdomen white, the tegulæ and abdomen tinged with pale rufous; antennæ, palpi, pectus, and legs tinged with pale rufous. Fore wing white mixed with pale rufous leaving the veins white, the medial area below the cell with some rather deeper rufous mottlings; a black discoidal point defined by white; a fine black terminal line to vein 2 formed by almost conjoined striae and a black point at extremity of submedian fold; cilia white with a fine black line at middle. Hind wing white with a fine red-brown terminal line to vein 2. Underside white, the fore wing and costal area of hind wing tinged with rufous.

Hab. BR. C. AFRICA, Fort Johnston (*Rendall*), 1 ♀ type. *Exp.* 18 mm.

(206 d) *Crambus digrammellus*, sp. n.

Crambus ligonellus, Druce, Biol. Centr.-Am., Het. ii. p. 292 (nec Zell).

Head, thorax, and abdomen ochreous white; palpi irrorated with brown; pectus, legs, and ventral surface of abdomen white. Fore wing ochreous white slightly irrorated with red-brown, the terminal

area finely striated with fuscous, the costal edge brownish towards base; postmedial line red-brown, oblique, arising at vein 7, incurved beyond lower angle of cell and somewhat angled outwards in submedian fold; subterminal line red-brown, excurved to vein 4, below which it is incurved, then again excurved; a terminal series of black points to vein 2. Hind wing ochreous white. Underside pale ochreous.

Hab. MEXICO, Presidio (*Forrer*), 1 ♂, 2 ♀ type, Goldman-Salvin Coll. *Exp.*, ♂ 16, ♀ 18 mm.

(206 e) *Crambus chionostola*, sp. n.

♂. Head, thorax, and abdomen silvery white; antennæ tinged with brown; palpi rufous at sides; legs tinged with rufous, the tarsi ringed with white. Fore wing silvery white sparsely irrorated with red-brown; an indistinct rather diffused oblique sinuous red-brown line from median nervure near lower angle of cell to inner margin; postmedial line red-brown, rather punctiform, excurved to vein 4 and angled inwards at vein 2; a terminal red-brown line formed by almost conjoined striæ and points. Hind wing silvery white with a faint red-brown tinge. Underside of fore wing suffused with red-brown, the hind wing with the costal area tinged with red-brown.

Hab. CEYLON, N. Province, Mankulam (*Pole*), 1 ♂ type. *Exp.* 18 mm.

(206 g) *Crambus brunneisquamatus*, sp. n.

♀. Head, thorax, and abdomen white tinged with ochreous; palpi irrorated with brown. Fore wing narrow, the costa arched; pale ochreous irrorated with brown; traces of a sinuous brown medial line from cell to inner margin, of a slightly waved postmedial line excurved to vein 4, then incurved, and of a curved subterminal line; terminal black points at veins 8 and 2; cilia with a fine brown line before the tips which are white. Hind wing white. Underside of fore wing and costal area of hind wing tinged with rufous.

Hab. BR. C. AFRICA, Ruo Distr., Muona (*Old*), 1 ♀ type. *Exp.* 28 mm.

(208 a) *Crambus albiradialis*, sp. n.

♀. Head and thorax fuscous brown with a silvery leaden gloss; abdomen white tinged with brown; palpi whitish at base; pectus, legs, and ventral surface of abdomen white suffused with red-brown. Fore wing fuscous brown with a golden cupreous gloss; the costal edge white; a silvery white fascia through the cell narrowing to points at base and termen; a slight white streak above vein 6 from end of cell to towards termen; a terminal series of black points;

cilia glossed with silver. Hind wing white tinged with brown, the cilia nearly pure white. Underside white, the fore wing and costal area of hind wing suffused with red-brown.

Hab. BRAZIL, Rio Janeiro (*Ery*), ♀ type. *Exp.* 32 mm.

Genus *CONOCRAMBUS*, nov.

Type, *C. atrimictellus*.

Proboscis fully developed; palpi porrect, typically extending about twice the length of head and fringed with hair above and below; maxillary palpi triangularly dilated with hair; frons with small pointed conical prominence; antennæ of male somewhat laminate and minutely ciliated. Fore wing with the apex hardly produced; vein 3 from before angle of cell; 4, 5 from angle and approximated for a short distance; 6 from upper angle; 7, 8, 9 stalked; 10, 11 from cell. Hind wing with vein 3 from angle of cell; 4, 5 shortly stalked; 6, 7 from upper angle, 7 anastomosing with 8.

(1) *Conocrambus atrimictellus*, sp. n.

♂. Head, thorax, and abdomen pale ochreous, palpi at sides and antennæ black-brown, thorax with brown slightly mixed. Fore wing pale ochreous; the costal area black-brown; a large diffused somewhat triangular black-brown patch on inner basal area; the end of median nervure and veins beyond the cell streaked with black; an ill-defined black postmedial line very acutely angled beyond lower end of cell and expanding into a large patch on inner area, its angle joined by a minutely dentate subterminal line from costa; terminal area white irrorated with black scales and with short diffused black streaks on the veins; a terminal series of black points; cilia white with black line through them and black tips. Hind wing fuscous, the costal and inner areas and cilia whitish.

♀. With the ground-colour of fore wing whitish, the markings fuscous, much less distinct and more blurred.

Hab. DUTCH N. GUINEA, Obi I. (*Doherty*), 1 ♀; NEW GUINEA, Humbolt Bay (*Doherty*), 2 ♀ type; D'ENTRECASTEAUX Is., Woodlark I. (*Meek*), 1 ♂; LOUISIADE Is., St. Aignan (*Meek*), 1 ♂. *Exp.* 20 mm.

(3) *Conocrambus calamosus*, sp. n.

♀. Head and thorax white suffused with brownish ochreous, the antennæ browner; abdomen white tinged with brown. Fore wing uniform brownish ochreous with a terminal series of slight dark points. Hind wing silvery white. Underside of fore wing silvery white with a faint ochreous brown tinge.

Hab. TRANSVAAL, Lydenburg, 1 ♀ type. *Exp.* 30 mm.

(4) *Conocrambus obliqua*, sp. n.

Silvery white; a double fulvous orange stripe on sides of tegulae and thorax; palpi fulvous orange at sides; pectus and legs marked with brown. Fore wing with the costal edge dark towards base; an oblique orange band with darker outer edge from costa before apex to middle of inner margin with a fine streak from it on inner margin towards base, its outer edge bent outwards and connected by a fascia with tornus; termen orange with minutely waved darker line on inner side; cilia orange. Hind wing slightly tinged with fuscous.

Hab. BRAZIL, Amazons, 1 ♂, Castro Parafía (*D. Jones*), type in Coll. Rothschild. *Exp.* 16 mm.

(21) *Diptychophora natalensis*, sp. n.

♂. Head, thorax, and abdomen white tinged with ochreous. Fore wing white irrorated with brown and suffused with ochreous leaving some white on inner basal area, defining the lines, and beyond the antemedial and before the postmedial lines towards costa; the lines fuscous and minutely dentate, the antemedial angle below costa, the postmedial at vein 6; a dark-edged yellow figure-of-eight-shaped discoidal spot; a prominent white subapical spot and subterminal series of black points. Hind wing white tinged with ochreous and with terminal brown line towards apex; cilia white tipped with brown in parts on fore wing, with fuscous line through them towards apex of hind wing.

Hab. NATAL, Estcourt (*Hutchinson*), 2 ♂ type. *Exp.* 14 mm.

(22) *Diptychophora minimalis*, sp. n.

♂. Head, thorax, and abdomen white tinged with rufous; pectus, legs, and ventral surface of abdomen ochreous white. Fore wing white tinged in parts with rufous, the inner half of medial area and the postmedial area except towards costa irrorated with black; antemedial line white defined on outer side by black scales, slightly sinuous; an ill-defined yellow discoidal spot; an indistinct curved white postmedial line defined on inner side by black scales; a fine black terminal line from apex to vein 4; cilia black at tips towards apex, wholly white at the indentation. Hind wing white with an ochreous tinge on apical area. Underside of fore wing white, the costal area tinged with rufous except a spot beyond middle.

♀. Head, thorax, and abdomen rufous mixed with black; fore wing almost wholly suffused with rufous and irrorated with black, the antemedial line almost medial defined on each side by black and straight, the postmedial line distinctly defined on each side by black; hind wing suffused with fuscous; underside suffused with fuscous, the fore wing tinged with rufous, the hind wing with curved postmedial line.

Hab. SIERRA LEONE (*Clements*), 2 ♂, 1 ♀ type. *Exp.* 10 mm.

(26) *Diptychophora argenticilia*, sp. n.

♀. Head, thorax, and abdomen red-brown tinged with greyish fuscous; pectus, legs, and ventral surface of abdomen brownish white. Fore wing deep rufous mixed with some whitish and fuscous, the medial area whiter; a curved blackish medial line; postmedial line blackish, excurved to vein 4, then oblique; a terminal series of slight dark points; cilia deep fiery red at base, with a black line at middle and silvery white tips with some fuscous at tips towards apex. Hind wing white tinged with fuscous; the cilia whiter with a dark line near base. Underside white suffused with fuscous, the fore wing with oblique black bar from costa, the cilia with a black line near base.

Hab. JAMAICA, Runaway Bay (*Walsingham*), 1 ♀ type. *Exp.* 12 mm.

(1a) *Argyria latifasciella*.

(Sect. *Eurhythma*, Turner.) Antennæ of male bipectinate.

Head black with white lines above eyes and at neck; thorax cupreous, abdomen ochreous. Fore wing black suffused with brazen yellow; ante- and postmedial erect white bands with waved edges, the latter broad, its outer sides strongly indented beyond the cell; a terminal black band with series of black points on it. Hind wing white with subterminal blackish band obsolete towards anal angle and with the area beyond it slightly suffused with fuscous.

Hab. N. AUSTRALIA, Port Darwin, 1 ♂, 1 ♀ type. *Exp.* ♂ 12, ♀ 14 mm.

(14b) *Argyria mesozonalis*, sp. n.

♂. Head and thorax silvery white, the sides of head, subdorsal stripes on tegulæ, and the metathorax bright rufous; abdomen ochreous, tinged with brown except the anal tuft; antennæ rufous; maxillary palpi rufous, white at tips; palpi yellow tinged with rufous; fore femora dark brown above, the tibiæ and tarsi red-brown; pectus, mid and hind legs and ventral surface of abdomen ochreous white. Fore wing silvery white; a bright rufous fascia on costa expanding into a patch at base; a medial rufous band forming a quadrate discoidal patch with a small yellowish spot on it, then narrowing, waved, and slightly irrorated with yellow; a truncate conical patch from the costal fascia before apex, its lower edge produced to a slight oblique tooth; a rufous terminal band with waved inner edge narrowing to a point at apex; cilia paler rufous with a deeper rufous line near base and a silvery gloss at tips. Hind wing silvery white with a faint reddish ochreous tinge; a terminal series of minute dark points to vein 2. Under side of fore wing suffused with red-brown.

Hab. PERU, La Oroya (*Ockenden*), 1 ♂ type. *Exp.* 20 mm.

(15 a) *Argyria eromenalis*, sp. n.

♂. Head, thorax, and abdomen white suffused with red-brown, the ventral surface of abdomen pure white. Fore wing white tinged and irrorated with pale red-brown; a rather diffused red-brown medial line defined on inner side by white, incurved below submedian fold; subterminal line white defined on each side by rather diffused red-brown, curved; a terminal series of black points. Hind wing white tinged with red-brown. Underside of fore wing and costal area of hind wing suffused with red-brown.

Hab. SUMBAWA, Tambora (*Doherty*), 1 ♂ type. *Exp.* 10 mm.

(18 b) *Argyria bicuspidalis*, sp. n.

♂. Head, tegulae, and prothorax black-brown, the rest of the thorax red-brown; abdomen whitish suffused with rufous; palpi white below towards base; pectus and legs whitish suffused with rufous; ventral surface of abdomen creamy white. Fore wing yellowish strongly suffused with rufous; a silvery white fascia occupying the cell and bidentate beyond it, the upper tooth short, the lower extending to the subterminal line, the fascia defined below by a black streak on median nervure and to the subterminal line at discal fold; an oblique red-brown postmedial striga from costa to the upper tooth of the fascia; subterminal line red-brown defined on outer side by white and oblique to vein 6, then blackish and angled inwards to near lower angle of cilia, then excurved and again angled inwards above discoidal fold in which it terminates; the terminal area black irrorated with white, narrowing to apex, towards which it is defined on inner side by white, and narrowing to tornus; cilia rufous, black-brown at tips towards apex. Hind wing whitish suffused with red-brown, darker towards termen; cilia whitish tinged with rufous. Underside whitish, the fore wing and costal area of hind wing suffused with red-brown.

Hab. BR. C. AFRICA, Mt. Mlanje (*Neave*), 1 ♂; PORTUGUESE E. AFRICA, E. of Mt. Mlanje (*Neave*), 1 ♂ type. *Exp.* 22 mm.

(18 d) *Argyria quadricuspis*, sp. n.

Platyles sp., Longstaff, Butterfly-hunting in many Lands, pl. ii. f. 11.

♂. Head red-brown and whitish; thorax red-brown; abdomen ochreous white; antennae brown; palpi pale red-brown, the maxillary palpi white at tips; pectus and legs ochreous white, the tarsi dark brown ringed with white. Fore wing grey-white suffused and thickly irrorated with reddish brown; a silvery white fascia defined by blackish through the cell extending from just below costa to discal fold where it is produced to a tooth just beyond middle, then narrowing and produced to three teeth well beyond the cell, the middle tooth rather longer, the area beyond its medial part more distinctly irrorated white and dark brown; subterminal line

white defined on each side by red-brown, very oblique from costa to vein 6, waved to vein 4, then oblique and strongly angled inwards just above submedian fold and outwards at the fold; a black terminal line; cilia white at base, then with brown line, the tips pale red-brown intersected with white. Hind wing white with a faint red-brown tinge, the termen deeper brown, rather broadly at apex and narrowing to vein 2; cilia white with a slight red-brown line near base to discal fold. Underside white tinged with red-brown, the fore wing with the costa deeper red-brown towards apex.

Hab. RHODESIA, Zambezi, Victoria Falls (*Longstaff*), 1 ♂ type. *Exp.* 22 mm.

(22 a) *Argyria obliquistrialis*, sp. n.

♂. Head, thorax, and abdomen creamy white, the last dorsally tinged with rufous towards base; palpi irrorated with black-brown at sides; legs tinged with red-brown. Fore wing creamy white tinged in parts with rufous and irrorated with rather large black-brown scales except on terminal half of costal area; very oblique medial and postmedial rufous strizæ from costa; a double rufous subterminal line, oblique towards costa, then curved; a terminal series of black points; cilia white with a fuscous line near base and the tips brown. Hind wing silvery white faintly tinged with brown except on inner area. Underside of fore wing and costal area of hind wing suffused with red-brown.

Hab. ARGENTINA, Gran Chaco, Florenzia (*Wagner*), 2 ♂ type. *Exp.* 16 mm.

(23 a) *Argyria albiceps*, sp. n.

♂. Head and thorax white, the tegulæ at sides and patagia tinged with red-brown, the vertex of head and thorax with slight dark streak; palpi white mixed with brown; abdomen whitish suffused with dark brown, the anal tuft white tinged with rufous; pectus, legs, and ventral surface of abdomen white tinged with brown. Fore wing whitish suffused with reddish brown leaving the veins white, the area below the cell from before middle and the area beyond the cell except towards costa irrorated with blackish; a black terminal line; cilia white with a black line at middle and some brown at tips. Hind wing brown; a slight dark terminal line; cilia white with a brown line at middle and the tips tinged with brown. Underside suffused with brown.

Hab. TRANSVAAL, Bultfontein (*Janse*), 2 ♂ type. *Exp.* 18 mm.

(23 b) *Argyria unipunctalis*, sp. n.

Head and thorax white, the tegulæ at sides and streak through middle of patagia tinged with pale red-brown; abdomen white, dorsally suffused with pale red-brown towards base; palpi, pectus, and legs tinged with pale red-brown. Fore wing white tinged

with pale red-brown and slightly irrorated with darker brown, the veins and costal edge white; a black discoidal point; a terminal series of black points; cilia white with a brown line near base and the tips tinged with brown. Hind wing almost pure silvery white. Underside of fore wing except the costal edge and the costal area of hind wing suffused with pale red-brown.

Hab. TRANSVAAL, Tweefontein (*Janse*), 1 ♂, Van der Merwe's Farm (*Janse*), 1 ♂, 3 ♀ type, Pretoria (*Distant, Janse*), 2 ♂. *Exp.* 20-22 mm.

(23e) *Argyria aræalis*, sp. n.

Head, thorax, and abdomen white tinged with ochreous, the last long and slender; antennæ fuscous at sides; palpi long; fore femora and tibiæ fuscous on inner side. Fore wing long and narrow, the apex produced, ochreous white irrorated with reddish brown; a black discoidal point defined by white; a terminal series of black points; cilia tinged with brown and with a blackish line through them. Hind wing silvery white. Underside of fore wing and costal area of hind wing tinged with red-brown.

Hab. MASHONALAND (*Dobbie*), 3 ♂, 3 ♀ type. *Exp.* 16-20 mm.

(24a) *Argyria albivenalis*, sp. n.

♀. Head, thorax, and abdomen white faintly tinged with rufous, the last with some fulvous yellow at base of dorsum. Fore wing white suffused with rufous leaving the veins white, the interspaces of terminal half slightly irrorated with brown; a slight brown terminal line. Hind wing silvery white. Underside of fore wing and costal area of hind wing tinged with rufous.

Hab. PARAGUAY, Santa Cruz (*S. Moor*), 1 ♀ type. *Exp.* 22 mm.

(26g) *Argyria atrisparsalis*, sp. n.

Diatraea neuricella, Druce, Biol. Centr.-Am., Het. ii. p. 295 (nec Zell).

Head, thorax, and abdomen white tinged with rufous. Fore wing white tinged with rufous and sparsely irrorated with black-brown, the submedian fold pure white; a minute antemedial black-brown spot on inner margin and black discoidal point; a terminal series of prominent black points slightly defined on inner side by white. Hind wing white faintly tinged with red-brown. Underside white tinged with red-brown.

Hab. MEXICO, Vera Cruz, Atoyac (*H. H. Smith*), 1 ♂ type, Tobasco, Teapa (*H. H. Smith*), 1 ♀, Godman-Salvin Coll. *Exp.* ♂ 26, ♀ 30 mm.

(26i) *Argyria tumidicostalis*, sp. n.

Hind wing of male with glandular swelling at base of costa.

♂. Head and thorax whitish suffused with red-brown, the palpi at sides and patagia irrorated with black-brown; abdomen white tinged

with red-brown; pectus, legs, and ventral surface of abdomen white tinged with rufous. Fore wing whitish suffused with red-brown; a rather diffused dark red-brown fascia below median nervure to just beyond end of cell and a few black-brown scales beyond the cell; a terminal series of minute black spots with silvery white points in centres; cilia silvery white with a red-brown line at base. Hind wing white, the costal area tinged with red-brown; a red-brown terminal line from apex to vein 2. Underside of fore wing and costal area of hind wing suffused with red-brown.

Hab. BENGAL, Patna, 2 ♂ type. *Exp.* 24 mm.

Larva in sugar-cane.

(26 j). *Argyria sticticraspis*, sp. n.

♀. Head and thorax greyish ochreous suffused with red-brown; palpi irrorated with dark brown; abdomen greyish ochreous with some rufous at base of dorsum; pectus, legs, and ventral surface of abdomen white tinged with ochreous brown. Fore wing greyish ochreous suffused with red-brown, the cell and areas just below and beyond it irrorated with darker red-brown; a curved post-medial series of small red-brown spots in the interspaces from below costa to above vein 1; a terminal series of minute black spots defined on inner side by slight white spots; cilia with slight red-brown lines near base and at middle. Hind wing pure white. Underside of fore wing white tinged with rufous.

Hab. MADRAS, Coimbatore (*B. Fletcher*), 1 ♀ type. *Exp.* 30 mm.

Larva in sugar-cane.

(26 k) *Argyria coniota*, sp. n.

♂. Head and thorax pale red-brown; antennæ ringed black and white; palpi whitish mixed with dark brown; abdomen whitish dorsally suffused with brown towards base; pectus, legs, and ventral surface of abdomen white tinged with red-brown. Fore wing pale red-brown mixed with some whitish and irrorated with blackish especially along median nervure and in and beyond end of cell; a medial series of slight black spots, incurved below the cell and sometimes reduced to the spot below the cell; two blackish discoidal points, the lower one sometimes defined on outer side by white; a more or less distinct curved blackish subterminal line; a terminal series of minute black spots defined on inner side by minute white spots; cilia with two dark lines through them. Hind wing almost pure white. Underside of fore wing and the costal area of hind wing suffused with reddish brown.

Hab. SIKKIM, 1800' (*Dudgeon*), 1 ♂; BENGAL, Behar, Pusa, 4 ♂ type. *Exp.* 20–26 mm.

Larva in sugar-cane.

(26 l) *Argyria argyropasta*, sp. n.

♂. Head and thorax red-brown mixed with some dark brown; abdomen white tinged with brown; pectus, legs, and ventral

surface of abdomen white tinged with red-brown. Fore wing pale red-brown mixed with whitish and irrorated with fuscous and a few silvery scales; a white streak below basal half of submedian fold and a streak below basal half of vein 5; a curved subterminal series of slight silvery points and slight dark streaks in the interspaces towards termen; cilia brown glossed with silver. Hind wing almost pure white. Underside of fore wing and costal area of hind wing tinged with red-brown.

Hab. CAPE COLONY, Annshaw (*Miss F. Barrett*), 1 ♂ type. *Exp.* 14 mm.

(26 m) *Argyria poliella*, sp. n.

♀. Head and thorax white with a slight brownish tinge; abdomen white with fulvous yellow dorsal patch on 2nd segment. Fore wing white slightly tinged with brown and with greyer streaks in and below cell and between the veins of terminal area; a minute discoidal black point; a very indistinct brown postmedial line, strongly excurved from costa to vein 5 then very oblique; a terminal series of black points. Hind wing white.

Hab. BA. C. AFRICA, Upper Shiré R., Zomba (*Rendall*), 1 ♀ type. *Exp.* 26 mm.

(26 n) *Argyria psammathis*, sp. n.

♀. Head and thorax pale red-brown mixed with whitish; palpi irrorated with black; abdomen white tinged with pale red-brown and with some fulvous yellow towards base of dorsum. Pectus, legs, and ventral surface of abdomen white tinged with pale red-brown. Fore wing whitish suffused with pale red-brown and slightly striated with blackish especially on inner half of medial area; a slight dark spot on upper discocellular; postmedial line indistinct, dark, excurved to vein 4, then oblique and slightly sinuous; a terminal series of minute black spots defined on outer side by silvery spots on the cilia. Hind wing almost pure white with a slight dark terminal line from apex to vein 4. Underside of fore wing and the costal area of hind wing tinged with red-brown.

Hab. GOLD COAST, Bibianaha (*Spurrell*), 1 ♀; N. NIGERIA, Bida (*Macfie*), 1 ♀ type, Minna (*Macfie*), 1 ♀. *Exp.* 24 mm.

(26 o) *Argyria bipunctalis*, sp. n.

♀. Head and thorax white irrorated with brown; palpi irrorated with large black scales; abdomen, pectus, and legs white tinged with red-brown. Fore wing white irrorated with brown except along median nervure and the base of the veins beyond the cell; two obliquely placed black discoidal points; a black terminal line; cilia silvery white with some blackish at tips. Hind wing silvery white. Underside of fore wing and costal area of hind wing faintly tinged with red-brown.

Hab. N. NIGERIA, Zungeru (*Macfie*), 2 ♀ type. *Exp.* 26 mm.

(28 a) *Argyria vittatalis*, sp. n.

♂. Head white, the antennæ tinged with red-brown, the frons at sides and palpi red-brown; thorax red-brown with a cupreous tinge and white dorsal stripe; abdomen white tinged with red-brown; pectus and legs white tinged with red-brown. Fore wing cupreous brown, the area below submedian fold white with some cupreous brown suffusion at base of inner margin and dark irroration above middle of inner margin; the costa pale rufous towards apex with an obliquely curved white fascia from below apex to above median nervure at origin of vein 2, its upper edge somewhat diffused; a slight dark discoidal spot; a dark terminal line with a narrow white band before it ending in a point above submedian fold; cilia white tinged with cupreous. Hind wing pale cupreous brown; a dark terminal line with some white before it except towards tornus; cilia white tinged with cupreous. Underside red-brown, the hind wing with indistinct curved dark subterminal line.

♀. Fore wing without the cupreous brown at middle of inner margin; hind wing white faintly tinged with brown and with a rather darker subterminal band.

Hab. BRAZIL, São Paulo (*D. Jones*), 1 ♂, 4 ♀ type; PARAGUAY, Sapucay (*Foster*), 1 ♀. *Exp.* 32-36 mm.

(28 c) *Argyria endochralis*, sp. n.

♀. Head and thorax whitish tinged with red-brown, the tegulae at sides and patagia bright red-brown; palpi red-brown; abdomen, pectus, and legs whitish tinged with red-brown. Fore wing pale rufous, the area below submedian fold white tinged with rufous and with some dark irroration below medial part of vein 1; a slight brown discoidal lunule; an oblique brown streak from apex to vein 5 beyond the cell; a dark terminal line except towards tornus; cilia with a brown line near base. Hind wing whitish tinged with rufous; a fine brown terminal line except towards tornus. Underside whitish tinged with rufous, the terminal areas rather whiter.

Hab. ARGENTINA (*Leech*), 3 ♀ type. *Exp.* 36 mm.

(28 d) *Argyria leucomeralis*, sp. n.

Head white, the antennæ and palpi at sides tinged with rufous; thorax and abdomen white with a golden tinge; fore legs red-brown on inner side. Fore wing with the costa pure white, the wedge-shaped area from just below it to the discal fold red-brown with a golden tinge; the area between discal and submedian folds pure white with some red-brown irroration towards termen; the inner area white tinged with rufous; an indistinct double brown post-medial line filled in with white from submedian fold to inner margin, excurved just above vein 1, then strongly incurved; a silvery white subterminal line slightly defined on outer side by blackish on the red-brown area, then on each side by rufous, oblique towards costa, then excurved and slightly incurved at submedian fold; a dark

terminal line with a black point below submedian fold; cilia white, brown at base at apex and tinged with brown towards tornus. Hind wing silvery white. Underside of fore wing with the costal half red-brown, the inner half white tinged with red-brown; hind wing with the costal area suffused with red-brown.

Hab. SIERRA LEONE (Clements), 3 ♂, 1 ♀ type. *Exp.* 16-22 mm.

(29 a) *Argyria retractalis*, sp. n.

♂. Head and thorax cupreous brown mixed with white; antennae, frons, and palpi cupreous brown; abdomen white suffused with red-brown on basal half and with red-brown subdorsal spots on terminal half; pectus, legs, and ventral surface of abdomen white, the tarsi brown at extremities. Fore wing with the basal area white with the costal edge cupreous brown and a patch of cupreous brown suffusion from subcostal nervure to vein 1; antemedial line black defined on inner side by white, arising at subcostal nervure, excurved at median nervure and strongly incurved at vein 1; medial area cupreous brown with a white streak below costa; postmedial line black, minutely waved and defined on outer side by white to vein 3, then retracted upwards to below costa, then with an inward curve to middle of inner margin, its retracted part cupreous brown above discal fold, a white patch before it on costal area and its retracted part with a strong white band on its outer side, a cupreous brown band beyond it and below it from vein 3 to inner margin; the terminal area white with rather dentate inner edge; a punctiform dark cupreous brown terminal line; cilia white. Hind wing silky white with a slight cupreous brown terminal line from vein 7 to below 4. Underside of fore wing and costal area of hind wing suffused with cupreous brown.

Hab. BR. GUIANA, Demerara (Rodway), 1 ♂ type. *Exp.* 16 mm.

(31 a) *Argyria undulalis*, sp. n.

Head and thorax creamy yellow tinged with rufous; abdomen ochreous with a rufous tinge towards base of dorsum; pectus and legs white, the latter slightly irrorated with brown. Fore wing ochreous suffused with rufous; a rather diffused blackish antemedial line, angled outwards below costa, then waved; an oblique blackish discoidal striga with a waved shade formed by dark scales from it to vein 1; postmedial line blackish with some silvery scales on it, dentate, obliquely excurved to discal fold, then incurved and excurved below submedian fold; a terminal series of minute black points; cilia red-brown at base, silvery white at tips. Hind wing ochreous white with a slight rufous tinge; a terminal series of black points to vein 2; the cilia white. Underside creamy white, the costal areas irrorated with black; both wings with slight curved black postmedial line from costa to vein 4.

Hab. BENGAL, Pusa (Lefroy), 2 ♂, 2 ♀ type; MADRAS, Bangalore (Minchin), 1 ♂. *Exp.*, ♂ 14, ♀ 16 mm.

(31 b) *Argyria conisphoralis*, sp. n.

♂. Head and thorax grey tinged with brown and irrorated with black; antennæ tinged with white; sides of frons with white lines; palpi white below except towards tips; abdomen white suffused with brown; pectus and ventral surface of abdomen white; legs white and brown. Fore wing white almost entirely suffused with red-brown and irrorated with black; antemedial line black, waved; two black points at middle of costa and two discoidal points on a whitish spot; postmedial line black, excurved from below costa to vein 4, then oblique, sinuous and defined on each side by white; a slight waved blackish subterminal shade; a fine black line before termen and a terminal line; cilia white with a strong black-brown line through them. Hind wing brown tinged with grey; a blackish terminal line; cilia white, brown at base and with brown line through them. Underside white; fore wing suffused with brown except on costal and inner areas, a blackish mark at middle of costa and curved postmedial line from costa to vein 3; hind wing with the costal area tinged with brown and irrorated with black, a brown postmedial line from costa to vein 2.

Hab. C. CHINA, Tientsin (Thomson), 1 ♂ type. *Exp.* 14 mm.

(32 a) *Argyria molybdogramma*, sp. n.

Head, thorax, and abdomen pale creamy yellow, the shoulders tinged with rufous, the base of abdomen more fulvous yellow; palpi tinged with rufous; pectus and legs white, the fore legs tinged with rufous in front. Fore wing pale creamy yellow suffused with rufous, the costal edge blackish towards base; antemedial line black suffused with silver and rather diffused on inner side, excurved below costa and slightly incurved at middle; a pale yellow patch in end of cell defined on outer side by a curved brown line and with a black streak above it on costa; postmedial line black suffused with silver, strongly excurved below costa and slightly above inner margin, slight white marks before and beyond it on costa followed by a short black streak: a terminal series of minute blackish points; cilia creamy white with two strong fuscous lines through them. Hind wing whitish, the terminal area tinged with rufous except towards costa; a curved brownish postmedial line; a slight brown terminal line and line through the cilia interrupted at submedian fold. Underside yellowish white; both wings with the costal areas irrorated with brown, a small brown discoidal spot and postmedial line excurved below costa.

Hab. QUEENSLAND, Townsville (Dodd), 1 ♂, 1 ♀ type. *Exp.*, ♂ 14, ♀ 16 mm.

(32 b) *Argyria calamochroa*, sp. n.

Head and thorax ochreous tinged with rufous; abdomen ochreous white with a more orange-yellow patch near base of dorsum; pectus and legs ochreous white, the hind tibiae blackish at extremity and

the spurs ringed with black, the ventral surface of abdomen with some black scales. Fore wing ochreous tinged with rufous and irrorated with dark brown; antemedial line represented by blackish spots in the interspaces and black spot at costa, excurved below costa; two slight dark discoidal spots; postmedial line blackish with a small black spot at costa, excurved below costa and slightly above inner margin; a terminal series of black points and striae; cilia with a black line through them. Hind wing ochreous white; a diffused brownish postmedial line from costa to vein 4; a terminal series of black points with a rather maculate brownish shade before them; cilia with brown mixed. Underside of fore wing ochreous, the costal area whitish irrorated with blackish, antemedial and medial black points on costa; a small discoidal spot with striga above it from costa, and curved brown postmedial line; hind wing ochreous white, the costal half irrorated with blackish, a wedge-shaped patch of black irroration below terminal half of submedial fold, a brown postmedial line from costa to vein 3, excurved below costa.

Hab. N. NIGERIA, Zungeru (*Macfie*), 2 ♀; BR. E. AFRICA, Gwelil (*Betton*), 1 ♂ type, Eb Urru (*Betton*), 2 ♀; BR. C. AFRICA, Likoma (*de Jersey*), 1 ♂, Shire Valley, Mwanza (*Neave*), 1 ♀; PORTUGUESE E. AFRICA, Mt. Chipirone (*Neave*), 1 ♂; CAPE COLONY, Annshaw (*Miss F. Barrett*), 2 ♂. *Exp.* 18 mm.

(34c) *Argyria duplicilinea*, sp. n.

Head white; thorax white mixed with cupreous brown; abdomen fuscous brown with some whitish at base; antennae black; maxillary palpi at base and palpi below black; pectus, legs, and ventral surface of abdomen brown and white, the tarsi banded brown and white. Fore wing white, tinged in parts with brown and irrorated with a few black scales especially on costal area except towards apex; a minute blackish annulus in middle of cell; medial line black, angled outwards at discal and submedian folds; subterminal line double, black, oblique towards costa, excurved at discal fold and slightly above inner margin, black streaks from it to termen above and below vein 6 and some cupreous brown suffusion at discal fold; a terminal black line towards apex and point below vein 3; cilia with a black line through them towards apex and some cupreous brown at discal fold. Hind wing white suffused with fuscous, the cilia whiter with a black line near base. Underside suffused with fuscous.

Hab. SIERRA LEONE (*Clements*), 1 ♂; GOLD COAST, Bilianaha (*Sprell*), 1 ♀ type. *Exp.* 16 mm.

(34e) *Argyria leucopsumis*, sp. n.

♂. Head white tinged with rufous; thorax and abdomen rufous mixed with black; antennae pale rufous; pectus, hind legs, and ventral surface of abdomen white tinged with rufous, the fore and mid legs dark brown, the tarsi ringed with white. Fore wing

whitish suffused with rufous and black-brown, the costal area black-brown irrorated with blue-white; antemedial line black-brown defined on inner side by white, very oblique to median nervure towards end of cell, and strongly incurved at vein 1, a white fascia below costa from it to above end of cell; a rounded black discoidal spot; subterminal line white defined on inner side by black-brown, curved; cilia white at base, tinged with rufous at tips. Hind wing cupreous brown, the cilia creamy white with a slight brown line at middle. Underside of fore wing dark red-brown, a curved whitish subterminal line with streaks beyond it in the interspaces; hind wing suffused with red-brown, a curved dark subterminal line with whitish streaks beyond it in the interspaces.

Hab. ASSAM, Khâsis, 1 ♂ type. *Exp.* 24 mm.

(34f) *Argyria bostralis*, sp. n.

♀. Head, thorax, and abdomen red-brown tinged with grey, the vertex of head and base of abdomen reddish ochreous; palpi whitish below; pectus, legs, and ventral surface of abdomen whitish tinged with brown. Fore wing red-brown tinged with grey; an indistinct oblique blackish antemedial line; a slight whitish discoidal lunule; postmedial line indistinct, blackish, excurved from below costa to vein 3, then incurved; a terminal series of blackish points. Hind wing grey suffused with brown. Underside grey suffused with red-brown, the terminal areas paler; both wings with indistinct curved dark postmedial line.

Hab. BR. E. AFRICA, Uganda Ry., Kibwezi (*Neave*), 1 ♀ type. *Exp.* 22 mm.

(4) *Eudorina semifascia*, sp. n.

♀. Head, thorax, and abdomen whitish strongly suffused with deep rufous, the ventral surface of abdomen whiter, the tarsi ringed with whitish. Fore wing deep rufous; a minute white spot at upper angle of cell; a narrow inwardly oblique white postmedial band from costa to vein 4, defined on outer side by rather diffused dark brown; an indistinct rather diffused dark subterminal line; a dark terminal line; cilia with rather maculate white line at base. Hind wing whitish suffused with rufous. Underside of fore wing rufous with rather diffused inwardly oblique postmedial dark line from costa to vein 4.

Hab. DUTCH N. GUINEA, Fak-fak (*Pratt*), 1 ♀ type. *Exp.* 16 mm.

(5) *Eudorina diffusa*, sp. n.

♂. Head, thorax, and fore wing dark red-brown, palpi at base and throat white; legs ringed with white. Fore wing irrorated with some white scales on medial area; a diffused oblique patch from costa to lower angle of cell; an oblique line from apex to vein 6 where it nearly joins a diffused band extending to just

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above inner margin; a terminal series of black and white points. Hind wing and abdomen paler.

Hab. BR. NEW GUINEA, Milne Bay (*Meek*), 2 ♂; D'ENTRE-CASTEAUX Is., Ferguson I. (*Meek*), 2 ♂ type. *Exp.* 20 mm.

(6) *Eudorina triangulifera*, sp. n.

♂. Head and thorax dark red-brown with whitish stripe on vertex; abdomen paler. Fore wing dark red-brown with slight dark streaks in and below middle of cell; a triangular blackish patch on middle of inner margin with broad whitish edge extending nearly to the cell, a similar postmedial patch on costa extending down to vein 5; an oblique obscure whitish subterminal line. Hind wing paler.

Hab. BR. NEW GUINEA, Milne Bay (*Meek*), 1 ♂; D'ENTRE-CASTEAUX Is., Fergusson I., N. Guinea (*Meek*), 1 ♂ type. *Exp.* 20 mm.

(10) *Eudorina ocellata*, sp. n.

♀. Dark red-brown; palpi white below; legs ringed with white. Fore wing with oblique pure white, black-edged subbasal spot; the orbicular and reniform rufous and black-edged, the latter with its edge incomplete above and connected with costa by an oblique white bar; a short oblique white streak from apex; a subterminal dark line with some white scales on its inner edge from just below the apical streak to inner margin. Hind wing paler rufous.

Hab. MOLUCCAS, Batchian (*Doherty*), type ♀ in coll. Rothschild. *Exp.* 22 mm.

(11) *Eudorina leucoselene*, sp. n.

♂. Head and thorax deep rufous; abdomen paler rufous; palpi below towards base and pectus in front and at sides white. Fore wing deep rufous; a dark brown antemedial spot with two white points on it below median nervure, a red-brown line from it, oblique to above inner margin and with some diffused whitish before it; a slight whitish spot on upper part of middle of cell; a small white discoidal lunule defined by rather diffused dark brown; a curved punctiform whitish postmedial line, almost obsolete from below costa to discal fold; a fine dark terminal line; cilia with a series of minute white spots at base. Hind wing whitish suffused with rufous especially towards termen; a slight faint dark discoidal spot; cilia with a line whitish line at base. Underside of fore wing and costal area of hind wing rufous, the hind wing with oblique rather diffused postmedial dark line from costa to beyond lower angle of cell.

♀. Fore wing with small white spot below base of cell, elliptical subbasal spot in the cell, rather quadrate antemedial spot on median nervure, the discoidal lunule larger and oblique, two minute

spots below the costa before a distinct postmedial spot and a rather conical spot before termen below apex, all defined by darker brown; a terminal series of small dark spots.

Ab. 1, ♀. Fore wing without the white spots below base of cell and apex, a subterminal series of minute dark spots between discal and submedian folds.

Hab. DUTCH NEW GUINEA, Mimika R. (*Wollaston*), 1 ♀; BR. NEW GUINEA, Milne Bay (*Meek*), 1 ♂, 1 ♀ type. *Exp.*, ♂ 22, ♀ 24 mm.

[To be continued.]

XLV.—*Some new Entozoa from Birds in Uganda.*

By H. A. BAYLIS, M.A.

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THROUGH the kindness of Dr. G. A. K. Marshall I have been enabled to examine a collection containing examples of eight species of Nematodes and Cestodes from birds in Uganda. These were collected and forwarded to the Imperial Bureau of Entomology by Mr. C. C. Gowdey in 1917.

The collection includes three species of Nematodes and five of Cestodes, all of which are probably new to science. Two of the Nematodes and one of the Cestodes unfortunately cannot be fully described, owing to paucity of material, but of the remainder Mr. Gowdey has been remarkably successful in obtaining complete and well-preserved specimens.

The types will be deposited in the helminthological collection of the British Museum (Natural History).

NEMATODA.

1. *Ascaris colura**, sp. n.

Host: *Lophoaëtus occipitalis*.

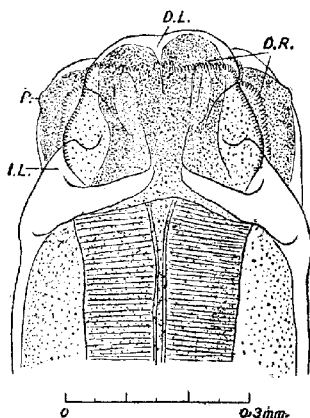
Two female specimens of an Ascarid from this host occur in the collection. Both are of about the same dimensions: length 46 mm., maximum thickness 1 mm. The transverse striations of the cuticle are very fine and not very distinct. The body tapers gradually anteriorly and very suddenly posteriorly. Just behind the lips the thickness of the neck is 0.5 mm. There is practically no tail, the posterior end

* κόλουρος, dock-tailed, stump-tailed.

being quite rounded and the anus situated at only 0.23 mm. from the extremity. The thickness at the anus is 0.55 mm.

The lips (fig. 1) are large and roughly hexagonal in outline. There are three small interlabia (fig. 1, *I.L.*). As seen from the front, each lip has two sharp projecting longitudinal ridges internally, with an indentation between them. Dentigerous ridges (fig. 1, *D.R.*) are well developed on the inner surface of the lips. The "pulp" of each lip is produced anteriorly into two large rounded lobes. The ventro-lateral lips have each a pair of very slightly raised papillae (fig. 1, *P.*); the dorsal lip apparently has none.

Fig. 1.



Ascaris colura; the head, seen from the dorsal side.

D.L., dorsal lip; *D.R.*, dentigerous ridges; *I.L.*, interlabium;

P., papilla of ventro-lateral lip.

The oesophagus is slender and of nearly uniform thickness throughout. Its length is about 7 mm. From the point where it enters the chyle-intestine a long intestinal diverticulum runs forward to about 1.6 mm. from the anterior end. There is apparently no oesophageal appendage.

The vulva is situated at about 17 mm. from the anterior end. The two uterine branches run backwards parallel to each other. The coils of the ovaries extend back almost to the posterior end of the body. The eggs are oval and have

a thin, rough shell. They measure $112 \times 70 \mu$ – $125 \times 75 \mu$. They do not contain a formed embryo at the time of laying.

Note.—The presence of an intestinal diverticulum, according to the view of some authors, necessitates the formation of a distinct family, or, at least, subfamily, for the three-lipped nematodes possessing it [see Railliet and Henry, 1912, 1915*]. The genera comprised in this "family," however, do not seem to have been very clearly defined up to the present. The species under discussion is therefore named only provisionally *Ascaris*, sens. lat.

2. *Subulura plotina*, sp. n.

Host: *Plotus rufus*. (Darter.)

The male (of which there is only one example) measures 8.2 mm. in length and 0.34 mm. in maximum thickness. The female (largest of four specimens) is 14.2 mm. long and 0.46 mm. thick. The worms are of slender build, tapering gradually at either end. In both sexes the neck bears a pair of lanceolate cuticular alæ at the sides, extending from the anterior end to about the beginning of the œsophageal bulb. The opening of the mouth is apparently hexagonal in outline. There is a small mouth-capsule with three very small teeth at the entrance to the œsophagus, as is usual in this genus. There are no lips, but the mouth is surrounded by six (?) very small papillæ. The excretory pore is situated at 0.45 mm. from the anterior end in the male and at 0.55 mm. in the female.

The œsophagus has an oval posterior bulb, which is distinctly marked off from the anterior portion, and has its hinder end pushed in, as it were, into the beginning of the intestine. The length of the œsophagus (including the bulb) is 1.25 mm. in the male and 1.5 mm. in the female.

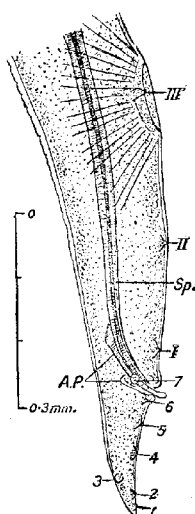
In the male the tail (fig. 2) measures only 0.2 mm. in length, and has no alæ. The preanal sucker, which is elongated in shape and has no chitinous border, is situated at about 0.4 mm. in front of the anus. The spicules (fig. 2, *Sp.*) are equal in length (about 0.9 mm.) and accompanied near the anus by an accessory piece (? two accessory pieces) (fig. 2, *A.P.*), the longest portion of which measures 0.13 mm. There are ten pairs of papillæ—six postanal (fig. 2, 1–6), one paranal (fig. 2, 7), and three preanal (fig. 2, *I–III*). Of these the third postanal (counted from the tail-tip) and the paranal are more laterally situated than the rest. The most

* Bull. Soc. Path. exot. v. no. 4, 1912, p. 256, and viii. no. 5, 1915, p. 270.

anterior of the preanal papillæ are situated at the sides of the sucker, a little in front of its middle.

In the female the tail is 0.8 mm. in length. The vulva is situated in the middle third of the body, at 5.8 mm. from the anterior end. The ova measure $65 \times 52.5 \mu$ – $75 \times 55 \mu$. The uterus extends back beyond the anus into the cavity of the tail.

Fig. 2.



Subulura plotina; tail of male, lateral view.

A.P., accessory piece; Sp., Spicules; 1-6, postanal papillæ; 7, paranal; I-III, preanal papillæ.

3. *Filaria* sp.

Host: *Merops albicollis*. (Bee-eater.)

Of this form there is only one specimen, a female. The total length is 31 mm., the maximum thickness about 0.5 mm. The mouth is apparently without lips or papillæ. A pair of 3-lobed glands open into the cavity of the mouth laterally. The vulva is situated at 0.4 mm. from the anterior end. The position of the anus has not been made out.

The tail is bluntly rounded at the tip. Almost the whole of the body-cavity is filled by the uterus, which contains enormous numbers of eggs. The latter measure $57 \times 37 \mu$ – $62 \times 40 \mu$. They have a rather thick shell and contain coiled embryo.

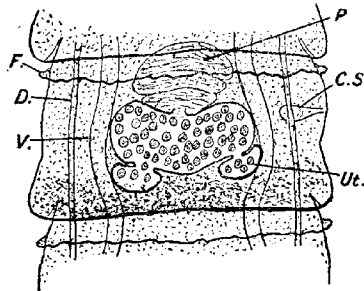
CESTODA.

4. *Biuterina ugandæ*, sp. n.

Host: *Cinnyris gutturalis*. (Sunbird.)

This is a small species, attaining a length of about 2 cm. upwards. The maximum width of the strobila is about 0.7 mm. The scolex measures 0.4 mm. across, and the suckers have a diameter of 0.2 mm., with a large forwardly-directed aperture. The rostellum has a muscular cushion at its apex,

Fig. 3.



Biuterina ugandæ; a gravid segment (from a whole preparation).

C.S., cirrus-sac; D., dorsal excretory vessel; F., cuticular frill; P., paruterine organ; Ut., uterus; V., ventral excretory vessel.

looking almost like a fifth sucker. This measures 0.12 mm. in diameter and bears two rows of about twenty-two hooks each. The hooks of the anterior row are about 20μ in length, those of the posterior row a little shorter. All the hooks are of the triangular shape characteristic of the genus.

Segmentation begins almost immediately behind the scolex. Each segment has a slightly raised fold or frill of cuticle running round it transversely near its anterior end (see fig. 3, F.).

The genital pores are irregularly alternating. The cirrus-sac is pear-shaped and measures 0·125 mm. long and 0·04 mm. in thickness at its widest part, which is near the inner end.

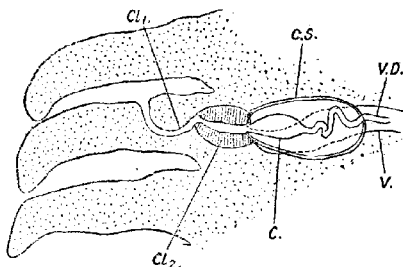
There are twelve or more testes in a compact group in the middle of the segment. The female genital apparatus calls for no special comment: the uterus (fig. 3, *U.*) shows the usual more or less complete division into two lateral portions, and a well-developed paruterine organ (fig. 3, *P.*) is present in front of it in the posterior segments. The ova do not appear to pass into the paruterine organ until after the separation of the segments from the strobila. The oncospheres measure 28 μ in diameter.

5. *Davainea debilis*, sp. n.

Host: *Anastomus lamelligerus*. (Open-bill Stork.)

Of this species the collection contains only one specimen, which measures about 45 mm. in length. The posterior segments are much contracted, and the length actually

Fig. 4.



Davainea debilis: diagram of the genital cloaca and terminal portions of the genital ducts. (Reconstructed from horizontal sections.) The overlapping lateral borders of three consecutive segments are seen.

C., cirrus; *Cl*₁, distal non-muscular portion of genital cloaca; *Cl*₂, proximal muscular portion of same; *C.S.*, cirrus-sac; *V.*, vagina; *V.D.*, vas deferens.

attained would probably be much greater. Anteriorly the worm is extremely slender, but it increases rapidly in width until the posterior segments measure about 3 mm. across.

The scolex measures only 0·2 mm. across and is very feebly developed. The suckers appear as mere cushion-like thickenings. They were apparently armed with hooks about

12 μ long, nearly all of which, however, have been lost. The rostellum measures 0.08 mm. in diameter and bears an enormous number of extremely minute hooks, the length of which is about 8 μ .

The neck, which is well extended, is unsegmented for a distance of about 1.2 mm. behind the scolex. The mature segments (much contracted) are extremely short and broad, and have greatly overlapping margins posteriorly and laterally. The longitudinal unisculature is very powerfully developed dorsally and ventrally, consisting of a thick layer of irregularly anastomosing fibres.

The ventral excretory vessels are connected at every segment by a transverse vessel, which is about half as wide as the medullary portion of the segment itself.

There are twenty or more testes in each mature segment, extending in a series right across the medullary parenchyme. The cirrus-sac and vagina open into a common genital cloaca (fig. 4, *Cl.*), the proximal portion of which has a very thick muscular wall, and the distal portion is non-muscular. The muscular portion is about 0.06 mm. long, the non-muscular about 0.05 mm. The dimensions of the cirrus-sac are 0.125 mm. \times 0.06 mm.

The gravid segments contain numerous egg-capsules enclosing four or five eggs each. The onchospheres measure only about 15 μ in diameter.

6. *Davainea* sp.

Host: *Bleda pallidigula*.

There is a single fragmentary specimen from this bird, to which, owing to its incompleteness, it is not proposed to attach a specific name.

The length of the fragment is about 15 mm. and its greatest width 0.9 mm. The scolex (contracted, and with retracted rostellum) measures 0.25 mm. across. The diameter of the suckers is 0.075 mm. and that of the rostellum about 0.1 mm. The size of the hooks on the rostellum has not been made out; those on the suckers are about 13 μ long.

The neck (rather contracted) is unsegmented for about 0.4 mm. behind the scolex. The segments are broader than long throughout the fragment, which, however, lacks gravid segments.

The earliest rudiments of genital organs appear at about the ninetieth segment. The genital pores are strictly unilateral. The testes number twenty to twenty-five, and are arranged mainly in two lateral groups, with a single row

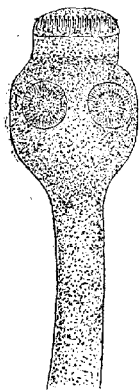
behind the female glands. The cirrus-sac measures about 0.1 mm. \times 0.038 mm., and curves from the genital pore towards the front of the segment. The ovary is divided into two more or less distinct portions, the vagina passing between them. The yolk-gland is posterior in position and is rather deeply lobate.

7. *Davainea vaganda*, sp. n.

Host: *Haliaeetus vocifer*. (Sea-Eagle.)

This is a very slender little form, with a comparatively large scolex. In general it approaches closely to *D. sphaeroides*, Clerc, 1903*, which is also parasitic in birds of prey, but it does not appear to be identical with that species.

Fig. 5.



Davainea vaganda; the scolex, highly magnified.

The present examples measure 2-3 cm. in length and have a maximum width (near the posterior end) of 0.55 mm. The scolex (fig. 5) measures 0.3-0.35 mm. across, and the diameter of the suckers varies from 0.11-0.15 mm. The latter are sometimes elongated in a transverse direction. The rostellum measures 0.22 mm. in diameter and is armed with numerous hooks 25 μ in length, arranged in two rows. The hooks on the suckers, which are also very numerous, measure 15 μ in length.

* Rev. Suisse Zool. xi. p. 359.

The neck is very slender and is unsegmented for from 0.4–1.0 mm., according to the state of contraction. The segments are broader than long throughout the strobila, except in some cases the last three or four gravid segments.

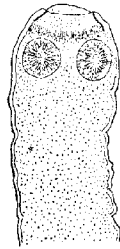
Rudiments of genital organs begin to appear at about the hundredth segment. The genital pores are strictly unilateral. The cirrus-sac measures 0.1 mm. \times 0.05 mm. The testes are very large and six to eight in number.

8. *Davainea bycanistis*, sp. n.

Host: *Bycanistes subquadratus*. (Hornbill.)

This species reaches a length of about 14 cm. and has a maximum width of 2 mm. The scolex (fig. 6) measures 0.27 mm. across, and the diameter of the suckers is 0.038 mm. The latter are armed with several rows of hooks, 13 μ in

Fig. 6.



Davainea bycanistis; the scolex, highly magnified.

length. The rostellum is 0.15 mm. in diameter and bears a double crown of hooks 15 μ long.

Segmentation begins at about 1 mm. behind the scolex. The segments are broader than long throughout the strobila, except the last few gravid segments. The genital pores are strictly unilateral. There are twelve to fourteen large testes in each mature segment, their diameter being about 0.075 mm. The cirrus-sac is rather elongate, has a muscular wall, and contains a very muscular cirrus. The dimensions of the sac are about 0.2 mm. \times 0.062 mm. The female glands form a small compact mass in the middle of the segment. Each gravid segment contains some thirty egg-capsules, which measure about 0.1 mm. in diameter, and contain each four to

five onchospheres. The latter (without their envelopes) measure $15\ \mu$ in diameter.

- * This appears to be only the second species of *Davainea* met with in this family of birds (Bucerotidæ); the one hitherto described is *D. emperus*, Skrjabin, 1914*, from *Buceros serotogynina*. The present species differs from *D. emperus* in the number of its testes, the absence of the well-developed sphincter-muscle of the genital cloaca, and other details. The scolex unfortunately cannot be compared in the two species, as that of *D. emperus* is unknown.

XLVI.—*Ethiopian Heteroptera: some new Species of Reduviidæ belonging to the Genera Pysttala and Platymeris.*
By W. L. DISTANT.

PYSTTALA.

Pysttala, Stål, Cefv. Vet.-Akad. Förh. 1859, p. 187.

Platymeris, Lap. (part.), Stål, ibid.; Hem. Afr. iii. p. 123 (1865).

"Thoracis lobo postico quadrispinoso, antico multispinoso, hemelytris spinulis armatis."

Type, *P. ducalis*, Westw.

Although Stål subsequently relegated *Pysttala* to a section of the genus *Platymeris*, it is clearly entitled to generic rank, and I am now able to add four more species to it. Of the type, *ducalis*, Westw., I can only refer to Westwood's figure and description, for the type cannot be traced by Prof. Poulton at Oxford; and although Westwood stated that another specimen was contained in the British Museum from Sierra Leone, no such example is now to be found in the National Collection.

Pysttala samwelli, sp. n.

Head, pronotum, corium, body beneath, and legs black; membrane dark ferruginous brown, especially on its apical area; a subquadrate spot near middle of corium, a broad subapical fascia to the femora, and somewhat large marginal spots to the abdomen sanguineous; antennæ with the first joint black, moderately stout, not quite reaching base of head, second joint ferruginous, about three times as long as first, third more ochraceous in hue, both second and third

* C.B. Bakt., Jena (orig.), lxxv. p. 69.

joints longly pilose; anterior lobe of pronotum with six long spines on discal area, two short spines near anterior margin, the anterior angles obtusely spinous, and a short spine near middle of lateral margins; posterior pronotal lobe with six spines, three on each lateral area, the lateral angles also strongly spinous; scutellum with long and robustly curved spines—one apical and one on each lateral margin; corium with six moderately short spines—four lateral and two sublateral; connexivum with some spines at the segmental angles.

Long. 38 mm.

Hab. W. Africa; Coomassie (*N. Samwell*).

Allied to *P. ducalis*, Westw., but differing by the much less spinous anterior marginal area of the pronotum; red annulations to the femora also shorter.

Pysttala incognita, sp. n.

In general colour and markings allied to the preceding species, but the anterior lobe of pronotum with only six spines, three on each lateral area, and the posterior lobe with four short spines, the posterior lateral angles longly spinous; corium with four sublateral and two inner spines.

Long. 37 mm.

Hab. West Africa (no precise locality).

Pysttala johnstoni, sp. n.

Head, pronotum, corium, body beneath, and legs black; membrane piceous; a subquadrate spot near middle of corium; a broad subapical fascia to the femora and somewhat large marginal spots to the abdomen ochraceous; antennæ with the first joint black, not quite reaching base of head, second joint ferruginous, about three times as long as first, moderately pilose; anterior lobe of pronotum with six long spines on discal area, the anterior angles obtusely spinous, posterior pronotal lobe with four spines, two on each lateral area, the lateral angles also strongly spinous; scutellum with long and robustly curved spines—one apical and one on each lateral margin; corium with three lateral and five or six sublateral spines; connexivum with some spines at the segmental angles.

Long. 38 mm.

Hab. W. Africa; Liberia (*Sir H. H. Johnston*).

Pyrtata dudgeoni, sp. n.

Head, pronotum, corium, and membrane black, extreme base of corium and a small spot near its middle sanguineous; body beneath and legs fuscous brown, subapical annulations to femora, apical halves of tibiae, and the whole of the tarsi paler in hue; connexivum ochraceous, with segmental quadrate black spots, posterior lobe of pronotum with two spines, one on each lateral area, the lateral angles also strongly spinous, anterior pronotal lobe with six prominent spines—three on each lateral area; scutellum with long and robustly curved spines—one apical and one on each lateral margin; corium with four sublateral but no inner spines; connexivum with some spines at the segmental angles.

Long. 39 mm.

Hab. W. Africa; Gold Coast, Volta River (*Dr. Dudgeon*).

PLATYMERIS.

Platymetis, Lap. Ess. Hém. p. 80 (1832); Stål (part.), Hem. Afr. iii. p. 124 (1865).

"Thoracis lobo antico spinis longis destituito; hemelytris margineque abdominis inermibus."

Type, *P. (Reduvius) biguttata*, Fabr.

Platymetis lavicollis, sp. n.

Black; a prominent spot near middle of corium and annulations to femora sanguineous, apices of tibiae and the tarsi more or less reddish ochraceous; antennæ with the basal joint black, remaining joints obscure dark ochraceous.

Long. 35–38 mm.

Hab. North Nyasa (*Farler*); Zanzibar (*Dr. W. M. Aders*); East Africa (German), Mpuapua.

Allied to *P. rhadamanthus*, Gerst., from which it differs by the smoother and much less rugosely striated anterior lobe of the pronotum.

Platymetis swirei, sp. n.

Black, head and pronotum glossy black; head before eyes, rostrum, legs, and connexivum ferruginous; a large pale greyish spot on disk of corium; antennæ ferruginous, basal joint about as long as from apex of head to eyes; head and rostrum distinctly longly pilose; pronotum sparingly longly pilose, the posterior angles distinctly spinous and moderately

recurved; scutellum with the basal and apical spines well developed; legs and sternum distinctly, somewhat longly pilose; anterior area of pronotum with a few short robust tubercles on each lateral area.

Long. 35 mm.

Hab. Gold Coast; N. Territory (*W. Swire*).

Somewhat allied to *P. guttatipennis*, Stål, but easily distinguished by the uniform and distinct coloration of the legs and the tuberculate anterior area of the pronotum &c.

CORRECTION.

By a curious though careless error in the title of my previous paper in the *Ann. & Mag. Nat. Hist.* (*ante*, p. 218) for "Heteropterous Family" Pyrrhocoridæ I wrote "Homopterous Family," and, more strangely also, did not observe the error in "proof."

XLVII.—*Papers on Oriental Carabidæ*.—I.

By H. E. ANDREWES.

IN constructing a Catalogue of *Oriental Carabidæ* I have come across a number of questions requiring further elucidation, among which I may mention cases of erroneous identification, synonymy both of genera and species, attribution of species to wrong genera, etc. I propose in this paper to give some notes and a few new descriptions to clear these points up.

SCARATINI.

Oxylobus costatus, Bates (not Chaud.), *Ann. & Mag. Nat. Hist.* (5) xvii. 1886, p. 71 = *O. minor*, Tchit. *Hor. Soc. Ent. Ross.* xxviii. 1894, p. 227.

Tchitcherin's species may prove, when more material is available, to be only a local form of *O. costatus*.

Crepidopterus favrei, Maindr. *Bull. Soc. Ent. Fr.* 1904, p. 264, fig. = *Scaritoderus loyolæ*, Fairm. *Bull. Soc. Ent. Fr.* 1883, p. 55.

Scarites boucardi, Chaud. *Mon. des Scaritides*, *Ann. Soc. Ent. Belg.* xxiii. 1880, p. 98.

Chaudoir did not know the locality of this species. I have
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seen two examples from Upper Assam taken by Mr. H. Stevens, and there are three examples in the British Museum labelled respectively Burma, Manipur (*Doherty*), and Tenasserim.

Distichus sexpunctatus, Ménét. Cat. Rais, i. 1832, p. 103.

Ménétrics would probably be surprised to find how constantly this name, invented by somebody else, but attributed to him, has been cited as a synonym of *D. planus*, Bon. Ménétrics says of his example of *D. planus*:—"Il diffère de la description qu'en donne le Comte Dejean, en ce que les jambes postérieures n'ont qu'une seule dent, et je n'ai pu compter que trois points imprimés sur chaque élytre." There is no mention of the word "*sexpunctatus*." *D. planus* can well afford to dispense with one of its numerous synonyms.

Clivina chlorizans, Bates, Ann. Mus. Civ. Gen. 1892, p. 282
= *Coryza chlorizans*, Bates.

Clivina debilis, Bates, Ann. Mus. Civ. Gen. 1892, p. 278.

This name is preoccupied by *C. debilis*, Blackb. Proc. Linn. Soc. N.S.W. 1889, p. 720. For Bates's species I propose the new name *C. invalida*.

Dacca, Putzeys. Postscr. ad Cliv. Mon. Mém. Liège, xviii. 1863, p. 68 = *Clivina*.

The only characters given to differentiate this genus from *Clivina* are the length and acuteness of the maxillæ and mandibles and the short scutellary striole—all variable in this genus, and insufficient to render a separate one necessary. I have seen a number of examples from Bengal.

SIAGONINI.

Siagona depressa, F.

This species was described by Fabricius in 1798 (Suppl. Ent. Syst. p. 56) as *Carabus depressus*, and following the description are the words "Habitat in Mauretania Dom. Schousboe, in India Orientali Daldorff, Mus. Dom. de Sehestedt." In 1801 (Syst. Eleuth. i. p. 24) the species reappears as *Galerita depressa*, but "Habitat in Mauretania Dom. Schousboe" has disappeared, and we have only "Habitat in India Orientali—Dom. Daldorff."

In 1813 Bonelli (Obs. Ent. ii. p. 458) described quite another species as *Siagona plana*. Dejean in 1825 (Spec.

(Gen. i. p. 361) described as *S. depressa*, F., an Indian specimen which was in fact identical with Bonelli's *S. plana*, and in the following year (Spec. Gen. ii. p. 468) he described another species from the Mediterranean as *S. europea*.

Chaudoir, in his Monograph on the genus (Bull. Mosc. 1876, i. p. 90), followed Dejean in identifying *S. depressa*, F., with *S. plana*, Bon., and he gives the habitat of *S. europea*, Dej., as extending from Senegal to Bengal.

In 1887 Mr. Bedel (Ann. Soc. Ent. Fr. p. 195) expressed the view that *S. europea*, Dej. = *S. depressa*, F. (not Dej., not Chaud.), and that the latter name should stand for the species, as in fact it does in his 'Catalogue raisonné des Coléoptères du Nord de l'Afrique,' 1897, p. 108. There the matter rests at present, and Mr. Bedel would be quite right if the Mediterranean and Indian species were identical. I have taken Indian specimens myself in considerable numbers, and have specimens or records from over thirty different localities all over India. I have also examined specimens from various countries bordering the Mediterranean and from Arabia. The conclusion I arrive at is that the two species are distinct. Fabricius evidently had both before him when drawing up his description, and, as Dejean has since described one of them as *S. europea*, I think the Mediterranean species should bear that name, the name *S. depressa* being reserved for the Indian one.

S. depressa is on average wider than *S. europea*, joints 1 and 2 of the antennæ are rather more dilated and joint 1 is more rounded off at the apex, the strangulation of the neck is deeper, the ocular ridges are stronger and practically reach the hind margin of the eye (they stop at two-thirds diameter of eye in *europea*). Prothoracic furrows rather deeper, punctuation of disk much stronger, sides more rounded and more contracted in front. Elytra rather more oval, less parallel, and a little more coarsely punctate; the smooth area along the raised suture much less evident, the pubescence rather longer and yellower in colour. Underside more closely punctate.

I wrote recently about the types to the University Museum of Copenhagen, and Dr. Lundbeck has very kindly examined the collection there and written me in reply. He tells me that the handwriting of Fabricius is not to be found in the Lund and Sehestedt collections, and he believes the labels to have been written by Sehestedt. There should be examples of *S. depressa* from Mauretania (*Schousboe*) and India (*Dal-dorff*), but the latter is not to be found. There are, however, two examples which have always been regarded as types,

one of which bears the label "Tanger. Schousboe, Mus. T. L. & S., *Carabus depressus*, F." The name Schousboe does not refer to a collection, but to a collector.

If the Indian type is not at Copenhagen, it is unlikely to turn up elsewhere, and must be regarded as lost.

BEMBIDIINI.

Bembidium europs, Bates, Ann. & Mag. Nat. Hist. (5) xvii. 1886, p. 156.

This species, founded upon a single specimen taken by Mr. George Lewis in Ceylon, is widely distributed throughout India. I consider it identical with *B. opulentum*, Nietn. (Ann. & Mag. Nat. Hist. (3) ii. 1858, p. 420), but Bates thought that Nietner's species was synonymous with *B. niloticum*, Dej. Spec. Gen. v. 1831, p. 73. Dejean described his species from Egypt, whence it ranges through Mesopotamia and China to Japan, and extends southwards into Indo-China. I have seen a solitary specimen from India taken by Mr. H. G. Champion in W. Almora (Himalayas). On distribution, therefore, *B. opulentum* is more likely to be *europs* than *niloticum*, and Nietner's description, though inadequate, fits *europs* better. Bates does not say that he has seen any authentic specimen of *B. opulentum*.

Bembidium xanthotelum, Bates, Ann. Mus. Civ. Gen. 1892, p. 287 = *B. xanthacrum*, Chaud. Bull. Mosc. 1850, iii. p. 175 (note).

Tachys euglyptus, Bates, Trans. Ent. Soc. Lond. 1883, p. 268 = *T. klugi*, Nietn. Ann. & Mag. Nat. Hist. (3) ii. 1858, p. 423.

Elaphropus, Motsch.

The pectinate claws are difficult to see, but I have been able to detect them in several Oriental species. The following should, I think, be referred to this genus, in addition to Motschulsky's *E. gracilis* and *E. latissimus*:—

Tachys ampliatus, Bates, Ann. & Mag. Nat. Hist. (5) xvii. 1886, p. 155.

— *haliploides*, Bates, Ann. Mus. Civ. Gen. 1892, p. 289, and var. *contractulus*, l. c. p. 290.

— *perlutus*, Bates, Trans. Ent. Soc. Lond. 1873, p. 299.

HARPALINI.

Acrogeniodon, Tchit. Abeille, xxix. 1897, p. 65 = *Chydæus*,
Chaud. Bull. Mosc. 1854, ii. p. 343.

Two species were described by Tchitcherin, viz., *A. bedeli* (l. c. p. 66), from Moupin, and *A. semenowi* (Hor. Soc. Ent. Ross. xxxii. 1899, p. 660), from Darjiling. Neither of these appears to be identical with the genotype, *C. obscurus*, Chaud. (l. c. p. 344), for a specimen of which I am indebted to Mr. T. G. Sloane.

Platymetopus interpunctatus, Dej. Sp. Gen. iv. 1829, p. 71.

The locality is given as Coromandel, which is almost certainly erroneous. The species inhabits Madagascar and the Seychelles.

KAREYA, gen. nov.

In Compt. rend. Soc. Ent. Belg. 1891, and Ann. Mus. Civ. Gen. 1892, Bates described a number of species under the generic name *Platymetopus* (?), and at p. 332 of the latter volume he makes some remarks upon it. The general appearance of these insects is widely different from that of typical *Platymetopi*, and the size is larger. In *Platymetopus* the ligula is short and bisetose, the paraglossæ small, extending a little beyond and enveloping it, with a fringe of hairs on the outer margin. In *Kareya* both ligula and paraglossæ are larger, the former bisetose but free at the apex, the latter wider, glabrous except for one or two minute hairs on the sides towards base. Mentum edentate, but with the middle of the emargination generally thickened; penultimate joint of labial palpi plurisetose; head with a fine suture on each side, extending from the frontal fovea to the eye. Both head and prothorax smooth, the latter finely punctate over the basal area, its form as in *Gnathaphanus*. Elytra minutely punctulate and very finely pubescent, one or more odd intervals (third always) seriate-punctate. Tarsi hairy on upper surface; front and intermediate tarsi in ♂ with four moderately dilated joints, biserially squamose beneath and fringed with long hairs; hind tarsi with joint 1 = 2 + 3.

All the known species were described by Bates. The genotype is *K. erebius*, Bates, Ann. Mus. Civ. Gen. 1892, p. 331, from Burma; the other species to be included are *K. edentatus*, *gnathaphanoides*, *grandiceps*, *major*, and *sublevis*. The generic name is derived from a Kanarese word meaning "black, dirty."

PRAKASHA, gen. nov.

In Ann. Mus. Civ. Gen. 1892, p. 333, Bates described *Platymetopus* (?) *amariformis*, but remarked at the end of the description, "The head is small and presents none of the peculiarities of the typical *Platymetopi*." The genus is nearer *Dioryche* than *Platymetopus*, but the form of the head and some other characters render a new genus necessary. The ligula and paraglossæ are as in *Dioryche*, mentum without tooth, but with the emargination thickened in middle; penultimate joint of labial palpi plurisetose. Form broad, surface smooth, colour æneous. Head small, smooth, convex, not depressed in front, clypeus only slightly emarginate, not exposing basal membrane of labrum; frontal foveæ small, curving outwards behind and continuing as a fine line to the eye; antennæ hardly reaching base of prothorax, very finely pubescent from middle of joint 3; eyes prominent. Elytral intervals 3, 5, and 7 with a row of punctures. Tarsi smooth on upper surface; front and intermediate tarsi in ♂ with four moderately dilated joints, 1 rectangular, 2, 3, and 4 triangular, biseriately squamose beneath.

The generic name is derived from a Kanarese word meaning "lustre."

P. amariformis, Bates, from Kawkareet (Tenasserim) and Taun-ngu, is the genotype and sole representative of the genus.

Amblysomus vittatus, Bates, Ann. Soc. Ent. Belg. 1892, p. 231.

The name is preoccupied by *A. vittatus*, Gestro, Ann. Mus. Civ. Gen. 1875, p. 885, and for Bates's species I propose the name of *A. bivittatus*.

Anoplogenus patinalis, Bates, Ann. Mus. Civ. Gen. 1892, p. 346 = *Lepithrix foliolosus*, Nietn. Journ. As. Soc. Beng. 1857, ii. p. 152 = *Anoplogenus discophorus*, Chaud. Bull. Mosc. 1852, i. p. 90.

Acupalpus marginatus, Bates (not Lucas), Trans. Ent. Soc. Lond. 1883, p. 241.

A note by Mr. Bedel, in his Cat. rais. des Col. du Nord de l'Afr. 1899, p. 158, note (2), induced me to examine the example in the British Museum, which I find to be *A. dorsalis*, F.

Tachycellus lamprus, Bates, Ann. & Mag. Nat. Hist. (5) xvii. 1886, p. 80 = *Trichotichnus lamprus*, Bates.

This species, labelled in Bates's handwriting, differs in so many respects from the description, that I think the author must have had some other insect before him. I cannot, however, find anything agreeing with the description among the Carabidæ taken by Mr. Lewis in Ceylon, and I can only mention the discrepancies I have noted. The upper surface is glossy and relucet, as mentioned, but blue-black rather than ænescent. The penultimate joint of the labial palpi is plurisetose, not bisetose; I am unable to detect the punctured fovea on the first segment of the abdomen in the ♂ (characteristic of *Tachycellus* and its allies); interval 3 of the elytra with a well-marked puncture just behind middle. I cannot at present see any reason why this species should not be included in Morawitz's genus *Trichotichnus*, though all those hitherto described are confined to N.E. Asia.

ANCHOMENINI.

Pristonychus kashmirensis, Bates, Proc. Zool. Soc. 1889, p. 214 = *P. spinifer*, Schaaf. Sitzungs. Ges. Isis, Dresden, 1862, p. 66.

Anchomenus politissimus, Bates, Proc. Zool. Soc. 1878, p. 719 = *A. lissopterus*, Chaud. Bull. Mosc. 1854, i. p. 136.

ODACANTHINI.

Casnonia ægrota, Bates, Trans. Ent. Soc. Lond. 1883, p. 278 = *Odacantha ægrota*, Bates.

Ophionea, Klug. Ent. Braz. Spec. 1821, p. 298.

This genus was formed for the three species, 1. *O. pennsylvanica*, L., 2. *O. cyanocephala*, F., 3. *O. surinamensis*, L. In No. 1 the fourth tarsal joint is simple, and in No. 2 it is bilobed. Of No. 3 I have no personal knowledge, but it is evidently quite a different insect from the others, and de Geer, in Mém. iv. 1774, p. 79, formed for it the genus *Colluris*. Klug mentions the fourth tarsal joint twice over, but his remarks are contradictory: under "Characteres" we read "tarsi articulo quarto elongato," but under "generis descriptio" this becomes "tarsi articulo . . . quarto brevissimo." A year later Latreille and Dejean, Hist. Nat. & Icon. d'Eur. 1822, p. 77, published the genus *Casnonia*, which was not,

and did not profess to be, other than identical with Klug's *Ophionea*. When, in 1825, Dejean published the first volume of his 'Species Général,' he introduced the genus *Casnonia* at p. 170, and, referring to the species included in it, he writes "Latreille les avait d'abord placés parmi les *Agra*, et il en a fait ensuite un genre particulier que je lui ai conservé; Klug, n'ayant pas connaissance de son travail, l'avait établi dans son *Entomologie brésilienne specimen*, sous le nom d'*Ophionea*." Klug could not in 1821 have any knowledge of a work published in 1822, and Dejean must therefore refer to some earlier work of Latreille. I have searched for this in vain, nor can I find any references anterior to 1822 in the works of other authors. The name was undoubtedly known, for it appears (under the guise of *Cosnania*) in Dejean's first Catalogue (1821). I think *Casnonia* must be ruled out as a pure synonym.

In 1829 Eschscholtz, Zool. Atl. ii. p. 5, in introducing his genus *Rhagocrepis*, gives a table differentiating this and allied genera. *Ophionea* figures in this table as having tarsi with a bilobed fourth joint; the actual species, *O. cyanocephala*, F., is not mentioned, but it is none the less made the genotype, and the fact that *Casnonia* is included in the same table (with a different signification) does not seem to me to invalidate this conclusion. *Ophionea* in this sense was recognized both by Schmidt-Goebel, Faun. Col. Birm. 1846, p. 20, and Lacordaire, Gen. Col. i. 1854, p. 73, though both of them were inclined to attribute the genus to Eschscholtz. Another genus, also for *O. cyanocephala*, F., was formed by Castelnau, Et. Ent. 1834, p. 40, under the name of *Casnoidea*, but this merely provides another synonym for *Ophionea*.

Mr. Bedel has already drawn attention, Bull. Soc. Ent. Fr. 1910, p. 72, to some of the details given above, but he does not come to the same conclusion. He makes *pennsylvanica* the type of *Ophionea*, and puts all the species with a cleft fourth tarsal joint under Castelnau's genus *Casnoidea*. In this he has been followed by Commandant Dupuis, Ann. Soc. Ent. Belg. 1913, p. 270. Mr. Sloane, on the other hand, in his table of the Australian Odacanthini, Proc. Linn. Soc. N.S.W. 1917, p. 414, retains *Ophionea* as defined by Eschscholtz, and also, like me, considers Motschulsky's genus *Lachnothorax*, Et. Ent. 1862, p. 48, as distinct from the other genera cited*.

* I may mention here that on a separate of his paper kindly sent me by Mr. Bedel there is a note to the effect that *cyanocephala*, F., = *Atteblabus indicus*, Thunb. Nov. Ins. Spec. part 3, 1784, p. 68, fig. 81, described from "Ind. Orient." This I have confirmed, as far as the slender description allows of confirmation.

The upshot of the above is that *pennsylvanica* and its Eastern allies are at present, according to my view, without a genus. My lack of knowledge of American Carabidæ prevents me from proposing a new genus for *pennsylvanica*, but I think that its elongate head, bordered prothorax, and the smooth apical area of the elytra separate it generically from all the Eastern species known to me. For some of the latter I propose the new genus *Arame*, though this will not include all of them. The type of this genus is described further on under the name of *A. macra*.

ARAME, gen. nov.

Ligula short, fairly wide, truncate in front, a little arcuate in centre, quadrisetose, the two inner setæ much longer than the outer ones; paraglossæ linear, membranous, free, glabrous, curving inwards, and rather longer than the ligula. Mentum with a short fairly sharp tooth in the emargination, about half as long as the lobes; epilobes evident, projecting in front of the lobes in the form of an acute tooth.

Maxillæ sharp, hooked at tip, with a row of strong bristles on inner side. Maxillary palpi glabrous, joints 2 and 4 half as long again as 3; last joint a little inflated, tapering and truncate at extremity. Labial palpi glabrous, except for the two setæ on inner margin of penultimate joint; joints equal, last one as in maxillaries.

Mandibles short, a small tooth on the right one at about middle, none on left, without seta in scrobe.

Antennæ reaching beyond base of thorax, first three joints glabrous, joint 1 inflated, with only one seta, joint 2 very short, joint 3=1, rest a little longer.

Eyes moderately prominent, a little removed from buccal fissure.

Labrum truncate, sexsetose.

Head subglobose, much inflated behind eyes, with two supraorbital setæ, strongly constricted behind, condyliform.

Prothorax subglobose, lateral margins obsolete or indicated by a very fine line only.

Elytra fully striate, but striæ generally becoming faint towards apex. Odd intervals—or, at least, interval 3—with some setiferous pores.

Last ventral segment in ♂ with one, in ♀ with two setiferous pores on each side; in the ♂ the margin is distinctly notched, in the ♀ only faintly so.

Tarsi smooth on upper surface, joint 4 entire but emarginate, joint 5 very long, with setæ beneath; in the hind legs

joint 1 is not much longer than 2. In the ♂ the first three joints of the front tarsi are faintly dilated and biserially squamose beneath. Claws simple, much dilated at base.

The name is derived from a Kanarese word meaning "very small."

The above characters are largely those of *Odacantha*, but in that genus the paraglossæ are wider, hardly longer than the ligula, adnate, though separated at apex from the ligula by a deep emargination. The chief difference, however, is in the thorax, which in *Odacantha* is very distinctly margined at sides over the front two-thirds. The elytra of this genus, too, are less convex and the striæ more finely punctate. The two genera are evidently closely allied, but the characters I have just mentioned seem to render them sufficiently distinct.

Arame macra, sp. n.

Length 6·65 mm.; width 1·6–1·8 mm.

Piceous. Palpi, first three joints of antennæ (2 and 3 sometimes infusate), legs (except coxæ and front trochanters), epipleuræ of elytra, and an ill-defined spot at apex (sometimes the whole of the apical third) reddish testaceous.

Head about 1 mm. in width (length behind eye = $1\frac{1}{2}$ times diameter of eye), convex, shiny, frontal foveæ well-marked, clypeus smooth, with a seta at each side, surface sparsely covered with coarse setiferous punctures, more closely in front, only a few behind level of eyes.

Prothorax barrel-shaped, without front or hind angles, shiny, about as long as head and a little narrower, widest in middle, contracted at each extremity, but more so in front than behind, slightly constricted just before base, which has a smooth border; side-margins obsolete, median furrow wide but not deep, surface covered with setiferous punctures, less closely on disk, the puncturation rather more dense than on head.

Elytra moderately convex, parallel, as long as head and thorax taken together, joining prothorax by a short peduncle, shoulders a little oblique, apex nearly squarely truncate, punctate-striate, less strongly towards apex; intervals 3, 5, and 7 each with a series of numerous small setiferous pores, the hairs standing out very clearly on unrubbed specimens viewed sideways.

On the underside the abdomen is smooth, head with a few large punctures, all sterna (except middle of metasternum) densely and very coarsely punctate, prosternal process smooth,

glabrous, unbordered, metepisterna three times as long as wide.

Very closely allied to *A. hæmorrhoidalis*, Motsch., if I have correctly determined that species, but the latter has the head less narrowly constricted, the back of the head (behind the level of hind margin of eyes) quite smooth, and only three or four setiferous pores on interval 3, none on 5 or 7. Bates thought that *hæmorrhoidalis* had pores on interval 5 as well as on 3 (*vide* Ann. Mus. Civ. Gen. 1892, p. 382).

Ceylon, Colombo, on coast-level, 7-27. ix. 1882 (*G. Lewis*). Other specimens taken in Ceylon by Dr. Thwaites. Type in British Museum. The specimens taken by Mr. Lewis are those determined by Bates, Ann. & Mag. Nat. Hist. (5) xvii. 1886, p. 199, as *Casnonia hæmorrhoidalis*, Motsch.

I cannot at present give more than a provisional list of the species which appear to belong to this genus. The list is as follows:—*A. macra* (type), *albicolon*, Bates, *celebensis*, Gestro, *bimaculata*, Schm. Goeb. (*distigma*, Chaud.), *flavicauda*, Bates, *fuscipennis*, Chaud., *graciliceps*, Bates, *hæmorrhoidalis*, Motsch., *latifascia*, Chaud., *litura*, Schm. Goeb., *metallica*, Fairm., *punctata*, Nistn., *subapicalis*, Oberth., *tetraspilota*, Schm. Goeb., *virgulifera*, Chaud., *xanthe*, Bates.

LACHNOPHORINI.

LOMASA, gen. nov.

Ligula short, wide, sides almost parallel, apex slightly arcuate, bisetose.

Paraglossæ membranous, very narrow, glabrous, rounded at apex, attached to ligula at base only, curving inwards and reaching a little beyond its apex.

Mentum with an emarginate tooth, half as long as side lobes, epilobes narrow, reaching a little beyond lobes, rather sharp, but with apex rounded.

Palpi setose, joints cylindrical, elongate, the last rather shorter, truncate at apex.

Mandibles short, hooked and pointed at apex, without seta in scrobe.

Labrum truncate, sexsetose. Eyes prominent, distant from buccal fissure.

Antennæ pubescent, filiform, two-thirds as long as body, joint 2 very short, 3 half as long again as the rest, which are about equal.

Body covered with a dense short pubescence. Thorax strongly cordate. Elytra short, slightly emarginate at apex.

Legs pilose, front tibiæ with a spine at apex and another at base of emargination.

The front tarsl in the ♂ with three squarely dilated joints, each with a pad of hairs beneath; joint 4 emarginate and furnished at apex with a tuft of very long hairs. Claws simple, long, and very thin.

The name is derived from a Sanskrit word meaning "hairy."

There is only one known species, which has already been twice described, viz.:—

Chlænus xanthacrus, Wied. Zool. Mag. ii. 1, 1823, p. 51 =
Chlænus hügelii, Redt. Reis. Novar. ii. Col. 1867, p. 9.

Chaudoir thought that this species, on account of its pubescent palpi, belonged to the Lachnophorini. I accept this view provisionally, as the group, which has few representatives in Asia, is not at present well known to me.

GALERITINI.

Galerita birmanica, Bates, Ann. Mus. Civ. Gen. 1892, p. 385
= *G. peregrina*, Dohrn. Stett. Ent. Zeit. 1880, p. 291.

Planetes puncticeps, sp. n.

Planetes bimaculatus (Mach.), Bates, Trans. Ent. Soc. Lond. 1873, p. 304; Putz. Compt. rend. Soc. Ent. Belg. 1875, p. 52; Heyd. Deutsch. Ent. Zeit. 1879, p. 329.

Length 12·0–14·5 mm.

Piceous; base of palpi, joint 1 of antennæ, femora, tibiæ, and a spot on each elytron testaceous; rest of palpi, joints 2 and 3 of antennæ, labrum, and tarsi reddish brown. The whole surface (except where impunctate) covered with a fine short yellowish pubescence.

Head (2·0–2·5 mm. wide) moderately convex and shiny, frontal foveæ wide and shallow, surface densely and finely punctate (smoother in middle of front), a number of large punctures mingled with the small ones, especially at back and sides; neck moderately constricted.

Prothorax (2·75–3·50 mm. wide) moderately shiny, slightly transverse, widest at a third from apex, a little emarginate in front, base bisinuate, with sides advancing to meet hind angles, sides rounded more sharply in front than behind, a sœa at a third from apex, another at hind angle, extremities equally contracted, front angles rounded, hind angles nearly

right, sharp, projecting slightly laterally; transverse impressions inconspicuous, median line faint, basal foveæ deep (making hind angles appear reflexed), the whole surface densely punctate.

Elytra (3.75–4.75 mm. wide) parallel, rather rectangular, more than twice as long as thorax, shoulders advanced, apex nearly squarely truncate; each elytron with nine primary narrow ridges, of which the first is close to the suture and the ninth (flatter and wider than the others) not far from margin, two secondary rather finer ridges between the primary ones, a row of setiferous punctures running between each primary and secondary ridge, but not between the secondary ones, a row of large pores inside the ninth ridge, from which emerge a few long setæ, chiefly visible near base and apex; the testaceous spots, more or less rounded, placed a little before middle, and extending from primary ridges 2 to 6.

Underside, except middle of head and a small space on each side near base of ventral surface, densely punctate and pubescent; prosternal process not bordered, metepisterna elongate, last ventral segment in both sexes slightly emarginate, with half-a-dozen setæ, longer than the general pubescence, on each side.

Tarsi setose on upper surface, joint 1 of hind tarsi = (very nearly) 2 + 3 + 4; front tarsi in ♂ with three joints moderately dilated, densely fringed with long yellowish hairs and with a row of ragged whitish scales along outer margin beneath.

Closely allied to *P. bimaculatus*, MacL., but distinguished by the much denser puncturation of the head, with large and small punctures mingled together, prothorax more transverse, wider in front, and more contracted behind, hind angles sharper and projecting a little laterally, basal foveæ deeper, puncturation coarser and closer, occasionally confluent, propisterna more evidently punctate (in *bimaculatus* nearly smooth).

Japan: Nagasaki and Yokohama (*G. Lewis*); Tsushima. China: Tschusan; Port Hamer. Type in the British Museum.

PERICALINI.

Catascopus cupricollis, Chaud. Col. Nov. i. 1883, p. 24.

This name is preoccupied by *C. cupreicollis*, C. O. Waterh. Trans. Ent. Soc. Lond. 1877, p. 1. I suggest *C. ensicollis*. The species seems very closely allied to *C. aruensis*, Saund.

Catascopus elongatus, Saund. Trans. Ent. Soc. Lond. 1863, p. 456, t. xviii. fig. 5 = *Holcoderus elongatus*, Saund.

Catascopus gracilis, Oberth. Notes Leyd. Mus. v. 1883, p. 220 = *Holcoderus gracilis*, Oberth.

Catascopus rugicollis, Saund. Trans. Ent. Soc. Lond. 1863, p. 464, t. xviii. fig. 6.

This is apparently a malformation of *C. aculeatus*, Chaud.

SPITAKANTHA, gen. nov.

Ligula moderately long, narrow, subcarinate at base, quadrisetose, apex free; paraglossæ membranous, adnate, nearly parallel, a little wider than ligula, extending very little beyond it.

Palpi glabrous; maxillaries with joint 2 incrassate = 4, which is cylindrical, slightly tapering and rounded at apex, 3 about two-thirds of 4, tapering towards base; labials with equal cylindrical joints, the last truncate at apex, penultimate with a single seta on inner margin.

Mentum transverse, quadrately emarginate, edentate, but base thickened in middle, lobes oblique and pointed, but rounded at apex, epilobes wanting.

Maxillæ curved, very sharp at apex, densely ciliate on inner margin.

Mandibles short, with a blunt tooth at base, right mandible with a small median tooth.

Labrum porrect, as long as wide, narrowed anteriorly, emarginate in front, with rounded angles, sexsetose, but the outside seta is placed far back, quite a third from apex.

Antennæ filiform, half as long as body, joint 1 short, incrassate, 2 very short, rest approximately equal, pilose from apex of 4.

Eyes moderately prominent, reaching buccal fissure.

Head with two supraorbital setæ, neck tumid.

Prothorax very strongly emarginate in front, a seta midway between base and apex and another at hind angle, both on margin.

Elytra very short, quadrate, a few large pores on interval 3, from which issue very long setæ; interval 3 with a single fine pore at a fourth from apex; margin with a series of minute hairs, as in *Stenotelus*, but no denticulation is perceptible. In *Peripristus* and *Sinurus* the denticulation is evident.

Tarsi glabrous above; front tarsi in ♂ with three slightly

dilated joints, clothed beneath with a few whitish scales; first joint of hind tarsi nearly equalling the succeeding three joints. Claws simple, but with faint traces of denticulation at base.

The generic name means in Sanskrit a "swollen neck."

The type of the genus is *Thyreopterus impressus*, Schm. Goeb. Faun. Col. Birm. 1846, p. 80. This is the only Oriental species described under the genus *Thyreopterus*, and its generic characters do not accord with those of the African species of that genus.

CALLIDINI.

Crossoglossa, Chaud. Mon. des Callidides, Ann. Soc. Ent. Belg. xv. 1872, p. 177 = *Phleodromius*, W. Macleay, Trans. Ent. Soc. N.S.W. ii. 1871, p. 85.

Mr. T. G. Sloane pointed out to me the identity of these two genera, but I do not think he has published any note on it.

Saronychium inconspicuum, Blackb. Ent. Month. Mag. xiv. 1877, p. 142 = *Endynomena prateri*, Fairm. Rev. et Mag. Zool. 1849, p. 34.

LEBIIINI.

Cymindis pictula, Bates, Trans. Ent. Soc. Lond. 1873, p. 310 = *Anomotarus (Cymindis) stigmula*, Chaud. Bull. Mosc. 1852, i. p. 57.

The genus *Uvea* was proposed by Fauvel (Bull. Soc. Ent. Fr. 1881, p. 118; id. Rev. d'Ent. i. 1882, p. 257) for Chaudoir's species, but Mr. T. G. Sloane, Proc. Linn. Soc. N.S.W. 1917, pp. 435-6, does not consider it as "more than, at most, a subgenus of *Anomotarus*."

XLVIII.—On Indo-Chinese Hymenoptera collected by R. Vitalis de Salazar.—II. By ROWLAND E. TURNER, F.Z.S., F.E.S.

Family Tenthredinidæ.

Subfamily ARGINÆ.

Arge vitalisi, sp. n.

- ♀. Lutea; mandibulis apice nigris; mesopleuris, tergitis 1-3 macula transversa mediana, quarto fere toto, 5-7 fascia lata

mediana, octavo macula magna mediana, sternito quarto macula laterali utrinque, coxis posticis, apice excepto, femoribusque posticis, basi luteis, nigro-purpureis; alis flavo-hyalinis, stigmate venisque nigris, sub stigmate late transverse brunneo-fasciatis.

Long. 13 mm.

♀. Head not narrowed behind the eyes; clypeus and face finely punctured; a carina running downward from the base of each antenna, the two joining about halfway between the antennæ and the base of the clypeus and enclosing a raised elongate-ovate area, from the apex of which a low carina runs to the base of the clypeus. Antennæ as long as the head and thorax combined; the third joint long, compressed and broadened towards the apex. Front above the antennæ with a deep longitudinal groove; vertex very finely and rather sparsely punctured. Vertical area slightly convex, nearly three times as broad as long, not sharply defined laterally. Thorax smooth and shining; the mesonotum anteriorly minutely and rather sparsely punctured. The space between the basal nervure and the origin of the cubitus is scarcely as long as the intercostal nervure; the nervulus is received at about two-fifths from the base of the discoidal cell. Hind tibiae with spine.

Hab. Ban Thion, Luang Prabang; March 18, 1918. 1 ♀.

This fine species is very distinct in colour from most species of the genus, but does not differ structurally or in neururation.

Subfamily TENTHREDININÆ.

Conaspidia fasciatipennis, sp. n.

♀. Ochracea, nitida; mandibulis apice, vertice maculis tribus magnis, mesonoto anticis lateribusque, tergitis tertio sequentibusque, tibiis apice extremo, femoribusque posticis linea supra, nigris; alis hyalinis, vix flavo-suffusis, anticis sub stigmate late fusco-fasciatis, apice in cellula cubitali quarta infuscatis, stigmate venisque fuscis, costa ochracea.

Long. 11 mm.

♀. Clypeus widely and rather deeply emarginate, rugosely punctured. Eyes separated from the base of the mandibles by a distance not exceeding one-third of the length of the second antennal joint. Antennæ as long as the abdomen, filiform, the third joint nearly four times as long as the second, the joints beyond the third gradually decreasing in length. Front finely rugose; vertex shining, shallowly and

sparsely punctured, vertical area longer than its greatest breadth, slightly narrowed anteriorly; the head swollen behind the eyes. Mesonotum obsoletely punctured, the median lobe divided from base to apex by a deep groove in which lies a low carina. Scutellum coarsely punctured, raised into a conical tubercle; mesopleuræ coarsely rugulose. Abdomen smooth. The apical fuscous mark on the fore wing is paler than the median fascia and occupies almost the whole of the fourth cubital cell and the extreme apex of the radial cell. The median fascia crosses the wing from the basal half of the stigma and does not extend apically beyond the second transverse cubital nervure. The discoidal nervure is separated from the base of the cubital nervure by a distance about equal to the length of the first transverse cubital nervure.

Hab. Tong Lap, Haut Mékong; April 30, 1918. 1 ♀.

Differs very strongly in colour from *C. sikkimensis*, Konow, the only other known species of the genus, especially in the fasciate wings; but the venation and structure do not differ appreciably.

Macrophya extrema, sp. n.

♀. Nigra; clypeo, labro, mandibulis basi, antennis articulis tertio quartoque intus, pronoto, tegulis basi, mesopleuris fascia lata mediana, scutello macula magna, cenchris, metanoto linea angusta apicali utrinque, propodeo fascia apicali lateribus fortiter dilatata, tergito apicali, coxis posticis supra, trochanteribus, femoribus anticis intermediisque, supra nigro-lineatis, femoribus posticis, apice nigris, tibiis basi, tarsisque, unguiculis exceptis, albo-flavidulis; alis fusco-hyalinis, basi fere hyalinis, stigmatibus venisque nigris.

♂. Femine similis.

Long., ♀ 11-13, ♂ 11 mm.

♀. Clypeus convex, very widely and shallowly emarginate, strongly punctured. Front very closely punctured-rugulose, vertex more coarsely and sparsely punctured, the front clothed with short white pubescence; vertical area punctured-rugulose, a little broader posteriorly than long, strongly narrowed anteriorly, the oblique lateral grooves smooth and shining. Antennæ with joints 5-7 thickened and somewhat compressed, the third joint as long as the fourth and fifth combined. Thorax closely punctured, the middle lobe of the mesonotum much more coarsely punctured than the lateral lobes and divided by a longitudinal groove nearly reaching the apex; mesopleuræ very coarsely punctured in front,

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rugulose posteriorly. Abdomen smooth and shining, propodeum rather closely punctured; hind coxæ, femora, and tibiæ closely punctured. Humeral cell divided far before the middle by a very short nervure.

Hab. Vien Poukha, Haut Mékong; May 11, 1918. 1 ♀, 3 ♂♂.

Somewhat related to the European *M. rustica*, Linn., but the antennæ are much longer than in that species, the clypeus less strongly emarginate, the puncturation coarser, and the humeral cell more contracted.

Family Ichneumonidæ.

Subfamily CRYPTINÆ.

Mansa funerea, sp. n.

♀. Nigra; antennis dimidio basali, palpis, abdominis segmento tertio sequentibusque, valvulis terebræ, pedibusque, coxis exceptis, fulvo-ferrugineis; mandibulis basi, oculorum orbitis internis late, abdominisque segmento secundo fusco-ferrugineis; alis fuscis, venis nigris.

Long. 16 mm.; terebræ long. 6 mm.

♀. Head strongly narrowed behind the eyes and towards the clypeus; cheeks long, about equal in length to the fourth antennal joint. Mandibles narrowed to the apex, ending in two very small teeth. Clypeus broadly truncate at the apex, closely and minutely punctured and clothed with fuscous hairs; face coarsely punctured-rugose. Antennæ inserted nearly as far from the anterior ocellus as from the apex of the clypeus, 39-jointed, scape produced beneath so as to form a partial sheath for the second joint; the third joint the longest, the fourteen basal joints fulvo-ferruginous, the antennæ gradually thickened to about the twentieth joint. Front and vertex finely rugulose, the space above the base of the antennæ smooth and shining and feebly concave. Thorax opaque, very closely and rather strongly punctured; the pleuræ rugosely punctured, with a broad oblique band on the middle of the mesopleuræ smooth and shining. Median segment coarsely punctured-rugose; the spiracles large and elongate, enclosed in an elongate triangular lateral area; on each side of the dorsal surface of the segment at the base is an area enclosed by the upper side of the lateral area, the base of the segment, and a curved carina which reaches the base a little on the outer side of the middle. Abdomen rather indistinctly microscopically punctured; first segment petiolate, the spiracles nearer to the apex of the segment than

to each other; the apical quarter of the segment rather strongly broadened, the whole segment as long as the hind coxa and trochanters combined. Areolet very large, about half as long again on the radius as on the cubitus, the second abscissa of the radius fully as long as the first and very little shorter than the third. Second recurrent nervure received just beyond one quarter from the base of the second cubital cell.

Hab. Vieng Vai, Haut Mékong; June 10, 1918. 1 ♀.

Easily distinguished by the dark fuscous wings from all other known Oriental species of the genus. The name *Mansa*, Tosq. (1896), has priority over *Colganta*, Cam. (1902), which must sink as a synonym.

Family Braconidæ.

Subfamily HELCONINÆ.

Helcon unicornis, Turn.

Helcon unicornis, Turn. Ann. & Mag. Nat. Hist. (9) ii. p. 172 (1918). ♀.

Hab. Tong Lap, Haut Mékong; April 30, 1918.

This species seems to resemble closely *Wroughtonia cornuta*, Cam., placed by that author among the Elyniidæ, and I think it quite possible that my name may have to sink as a synonym. Cameron's description is not very clear, and was taken from a specimen with broken antennæ. But, on the whole, I think there can be no doubt that the genus *Wroughtonia* belongs here, and should sink as a synonym.

XLIX.—Description of a new Genus and Two new Species of *Heterocera*. By Lord ROTHSCHILD, F.R.S.

Spilosoma ignivagans, sp. n.

♂. Very closely allied to *erythrophleps*, Hmps., but with less red on fore wings and fewer pale markings on hind wings.

Antennæ black, pectus and legs sooty-slate, frons and vertex rufous-orange; thorax rufous-orange, with a sooty dot on tegulæ and sooty streaks on patagia; abdomen above rufous-orange ringed with sooty black, below white.

Fore wing slate-brown with orange-scarlet nervures; three ill-defined orange-scarlet patches on basal half of costa; two rufous-orange spots in cell and one beyond; four irregular

bands of rufous-orange below median to inner margin, much angled, waved, excised, and partially joined. Hind wings sooty slate-grey, with white veins; a broken irregular post-median band, broader between vein 2 and abdominal margin; some white spots at end of veins.

Length of fore wing 26 mm.; expanse 56.5 mm.

Hab. Tali, Yunnan.

DEPALPATA, gen. nov.

This genus is nearest to *Burgena*.

Proboscis minute; palpi with second and third joints aborted, minute, and curved downwards; frons smooth; antennæ almost simple; tibiæ smooth, the spurs minute, the hind tibiæ with terminal spurs only.

Fore wing: vein 2 from long before angle of cell, 3 from close to angle, 4 and 5 from angle, 6 from upper angle; 7, 8, 9, 10 stalked; 11 from cell. *Hind wing*: 2 from well before angle of cell; 3, 4 from angle; 5 obsolescent from middle of discocellulars; 6, 7 stalked; 8 anastomosing with the cell near base only; underside with whole inner area clothed with rough androconia extending into lower end of cell and to vein 7.

Depalpata mirabilis, sp. n.

♂. Antennæ black; pectus orange-yellow; frons and vertex black; thorax velvety black; collar and edges of tegulæ yellow; abdomen black, strongly glossed with greenish steel-blue; anal tuft golden-orange.

Fore wing velvety black, an oblique creamy antemedian band. Hind wing black, intensely shot and glossed with blue; a large pure white subbasal patch in cell and a smaller one below cell; large tufts of rough sooty-black hair on each side of vein 1 *b*; tornus whitish.

Underside: abdomen as above, but with a large white patch on third segment. Fore wing sooty-black with dull blue gloss; antemedian band as above, but divided into two, and with an irregular white expansion distad below vein 2; on the base of the cell and on costa a white dot; beyond the discocellulars an irregular large white patch extending from subcostal to vein 3. Hind wings sooty-black glossed with dull blue; whole area below vein 7 covered with a dense felting of rough whitish androconia except a patch of white and a spur of dark colour in cell.

Length of fore wing 29 mm.; expanse 65 mm.

Hab. Hydrographer Mts., S.E. British New Guinea, 2500 ft., March 1918 (*Eichorn Bros. Coll.*).

L.—On small Mammals from "Otro Cerro," North-eastern Rioja, collected by Sr. L. Budin. By OLDFIELD THOMAS.

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AFTER making the collection at Chumbicha, Catamarca, of which an account is given in the 'Annals' for January 1919, Sr. Budin travelled westwards some 30 miles, over the Cerro de Ambato to "another hill," or range of hills, for which he could find no recognized name, but which, after consultation with the authorities of the Geographical Society, I suppose to be an unnamed range running southward from the Cerro Nunorca. Although Sr. Budin considered himself to be still in Catamarca, and labelled the specimens accordingly, the distance and direction from Chumbicha show that he must have crossed the frontier into Rioja.

Under these circumstances I have decided to use Sr. Budin's fancy name of "Otro Cerro," as put on his labels, but with correction as to the province. If more exact definition can be obtained from him it will be published later, but for the present the locality may be stated as 45 kilometres west of Chumbicha, the specimens being taken at an altitude of about 3000 metres.

The collection contains quite a number of interesting species, of which the most striking are the new *Lagidium*, the skunks, and tuco-tuco, while the good series of such forms as *Phyllotis* and *Graomys* have enabled me to make further study of these difficult groups.

Like all Sr. Budin's recent specimens, the skins are beautifully prepared, and thus together form a very valuable addition to the National Collection.

Arising out of a suggestion by Sr. Budin, I should like to propose that certain Spanish and other colloquial terms should be definitely restricted to particular genera, so as to be available for vernacular names. The native words used as names by Mr. Perry Simons, Sr. Budin, and others have generally been rather vaguely applied, but might easily be pinned down to special genera, where they would be of great convenience.

Thus I would take Azara's name of "Hociendo" for the species of *Oxymycterus* and "Iaucha" for *Hesperomys*. Then *Andinomys* might be "Chozchorito," *Phyllotis* "Pericote," and *Oryzomys* "Coludo," which equals "Long-tail." Other colloquial names are already well known, but where there are none I shall hope, with Sr. Budin's assistance, to suggest some which might be suitable and convenient.

In this collection there is an interesting amount of geographical isomorphism. Thus there are two species of skunks, both with white tails, being almost the only white-tailed skunks known. And there are no less than *five* different Murines (*Audinomys edax*, two species of *Phyllotis*, and two of *Graomys*) so similar *inter se* externally that they might all be mistaken for a single species at different stages of age. So striking a case of local resemblance between different animals I do not remember ever to have seen before.

1. *Conepatus budini*, sp. n.

♂. 334.

A rather small skunk with a conspicuous bushy white tail. The upper molar large.

Size a little less than in *C. gibsoni*, therefore distinctly less than in any other S.-American species except the much smaller *C. proteus*. Fur thick and abundant, with the usual woolly underfur; direction of nape-hairs in the type absolutely normal, without whorls or reversed hairs. White stripes of body about an inch or a little less in breadth, united on the forehead by a junction of about the same breadth, and evenly divergent posteriorly, the black median area about $1-1\frac{1}{2}$ inch broad on the nape, widening to $2\frac{1}{2}$ on the posterior back; the white bands dying away on the hip, about 2 inches before the white of the tail commences. Tail very fine and bushy, the hairs attaining about 100 mm. in length; a little white on each side of the tail-base, then a small black median patch on its upper base; the whole remainder of the tail white, apart from the presence of a few isolated and scarcely perceptible black hairs intermixed with the white.

Skull alone exceeding that of *C. proteus* in size, its breadth, especially its mastoid breadth, rather greater than usual in proportion to its length, though the specimen is not very old. Mesopterygoid fossa comparatively broad. Upper molar large, subquadrangular, with its antero-posterior diameter exceeding the outer length of p^4 .

Dimensions of the type:—

Head and body 340 mm.; tail* 240; hind foot 55; ear 30.

Skull: greatest (diagonal) length 71.5; condylo-basal length 66.5; zygomatic breadth 45; interorbital breadth 23; intertemporal breadth 18.5; mastoid breadth 39; palatal length 28; breadth across m^1 28; breadth of mesopterygoid

* The tail, apparently perfect, is now barely 200 mm. in length. Perhaps 240 is a *lapsus calami* on the part of the collector.

fossa 8.5; maxillary tooth-row 22.5; length of p^4 7.2; m^1 , greatest antero-posterior length * 8.0, transverse breadth * 8.2.

Type. Adult male (basilar suture closed, but teeth not much worn and crest not developed). B.M. no. 19. 2. 7. 1. Original number 334. Collected 21st August, 1913.

This handsome animal, which I have much pleasure in naming after Sr. Budin in recognition of the excellent work he has done, is readily distinguishable from all hitherto described South-American species by its conspicuous white tail and the proportions of its skull and teeth. *C. tropicalis trichurus*, Thos., from Panama, also has a white tail, but is larger and is otherwise wholly different.

In the present collection there are three specimens of this genus—one larger with large teeth, and two smaller with very small molars,—but all with white tails, and it was natural to assume that the two smaller were females and the larger one a male. On investigation, however, not only of Sr. Budin's labels, but of the skins themselves, damped and pliable, I find that all are certainly males, and are therefore clearly not of the same species. Consequently I am compelled further to describe

2. *Conepatus calurus*, sp. n.

♂. 330, 361.

A white-tailed skunk with narrower skull and smaller molars than in *C. budini*.

Size slightly less than in *C. budini*, but still exceeding that of *C. proteus*. Fur long and thick. Hairs of nape either reversed or with an inclination to have twisted whorls. General pattern of colour much more white than in *budini*, for instead of two comparatively narrow white stripes running down the black back, the whole nape and back may be said to be white, with merely a narrow black line ($\frac{1}{4}$ to $\frac{1}{2}$ inch in breadth, attaining $\frac{3}{4}$ inch on the loins) along its centre, this line altogether failing in some parts. Posteriorly the white narrows, but is continuous with that of the tail. Tail bushy, white, with a few black hairs intermixed.

Skull about as long as that of *C. budini*, but narrower in proportion, the mastoid breadth, in a specimen with sagittal crest and worn teeth, disproportionately less than in that animal. Mesopterygoid fossa narrow.

* In describing *C. ajax* (Ann. & Mag. Nat. Hist. (8) xi. p. 137, 1913) the diagonal measures of this tooth were given, and one of these was misprinted 9 instead of 6.9. The above measurements are sounder, if less easy to take, and in the type of *C. ajax* are 8.3 and 7.0 respectively.

Molars conspicuously smaller than in *C. budini*, their antero-posterior diameter less than the outer length of p^4 .

Dimensions of the type:—

Head and body 320 mm.; tail 190; hind foot 57; ear 25.

Skull: greatest (diagonal) length 69.5; condylo-basal length 66.5; zygomatic breadth 43; interorbital breadth 21.2; intertemporal breadth 15.6; mastoid breadth 36; palatal length 28; breadth across outer corners of m^1 26; breadth of mesopteryoid fossa 6.5; maxillary tooth-row 21.5; outer length of p^4 6.7; m^1 , antero-posterior diameter 6, transverse diameter 8.

Type. Old male, with worn teeth and well-developed crests. B.M. no. 19. 2. 7. 3. Original number 361. Collected 28th September, 1918.

As with *C. budini*, the white tail and small size distinguish this skunk from all earlier-described species. From that animal it is separable by the less bulky skull and much smaller molars, in addition to the different pattern of the dorsal markings. In comparing the skull-measurements of the two note must be taken of the fact that the broad skull of the type of *C. budini* is distinctly less aged than the narrow one of *C. calurus*.

3. *Oryzomys* sp.

♂. 320, 348, 375, 383; ♀. 329, 331, 376.

4. *Andinomys edax* Thos.

♂. 342.

"'Chozchorito.' Rare."—E. B.

The striking external resemblance that *Andinomys* bears to *Phyllotis* is shown by the fact that Sr. Budin, usually so quick to detect the finest specific distinctions, united with no. 342 several examples of the larger *Phyllotis* of the same region.

This forms a considerable extension of the known range of the species, which was first described from Potosí, and was again found by Sr. Budin in Central Jujuy.

5. *Phyllotis tucumanus*, Thos.

Phyllotis darwini tucumanus, Thos. Ann. & Mag. Nat. Hist. (8) x. p. 408 (1912).

♂. 343, 344, 349, 352, 354, 364, 370; ♀. 337, 365, 367, 371.

In view of the complication caused by the many local forms of this genus, it seems best to use a trinomial term for this animal.

Bullæ small, nasals unusually narrow and pointed behind, ears and tail short, all as compared with the next species.

The bullæ are about 4 mm. in longitudinal diameter as measured along a line parallel with the middle line of the skull. Ears as measured by collectors 21 or 22 mm. in length. Tail usually 100-110, rarely 115 mm. In two very old specimens, however, nos. 349 and 364, of whose determination I do not feel quite sure, these dimensions are exceeded, the ears and tail reaching to lengths normal in *Ph. ricardulus*.

6. *Phyllotis ricardulus*, sp. n.

♂. 332, 355, 366, 372; ♀. 346, 351, 373.

Like *P. tucumanus*, but with larger bullæ, larger ears, and longer tail.

Size about as in *tucumanus*. General colour above olive-grey, varying, as do all the species of *Phyllotis*, in the extent to which buffy is suffused in the colour. Sides, when in adult pelage, with a well-marked buffy band running from cheeks to base of tail. Under surface soiled grey, the hairs very dark slaty basally, broadly washed with whitish or buffy whitish. Ears decidedly longer than in *tucumanus*, but much smaller than in *vaccarum* or *wolffsohni*, their prototote blackish, the rest grey. Hands and feet pure white. Tail longer and more heavily pencilled than in *tucumanus*, its length rarely less than 130 mm.; blackish proximally and black terminally above, white below.

Skull with the nasals not so markedly narrowed behind as in *tucumanus*. Supraorbital edges sharply square, not ridged. Palatal foramina reaching to the level of the first lamina of *m*¹. Bullæ comparatively large, distinctly larger and more fully inflated than in *tucumanus*, though smaller than in *vaccarum*, their antero-posterior length on a line parallel with the middle axis of the skull 5 mm. or more. Molars averaging smaller than in *tucumanus*, though rather variable.

Dimensions of the type:—

Head and body 112 mm.; tail 145; hind foot 26; ear 23.

Skull: greatest length 30; condylo-incisive length 27.5; zygomatic breadth 15.8; nasals 12.5; interorbital breadth 4.2; breadth of brain-case 14; palatine foramina 7.2; post-foraminal palate 5.3; bullæ (measured as described above) 5.1; upper molar series 5.

Type. Adult female. B.M. no. 19. 2. 7. 27. * Original number 346. Collected 31st August, 1918.

Although undoubtedly closely allied to *Ph. tucumanus*, this species may be distinguished by its longer ears, its longer

and more heavily tufted tail, and its larger bullæ. Comment has already been made on the number of species, superficially resembling each other, which live in this region, and the occurrence of these two closely allied *Pericotes* in the same locality is very remarkable. But it has a parallel in Europe, in the relationship to each other of *Apodemus sylvaticus* and *A. flavicollis*.

These latter, however, are inclined to segregate themselves from each other locally, and it is not improbable that a closer study of the actual places where the two *Pericotes* are found will similarly show that they also are not both to be caught absolutely on the same ground.

7. *Graomys carchinus*, Allen.

♂. 321, 323, 350, 378.

[In naming these specimens I have re-examined the undetermined series referred to in my Chumbicha paper, which series I then supposed to belong to but a single species.

To my surprise I now find that those specimens belong to no less than three species—large, middle, and small,—distinguishable almost entirely by size, though, as is not unusual in such cases, the development of ears, tail, and tail-tufts are in proportion to the general size, the larger species being finer animals throughout, with more handsomely tufted tails. There are no specimens of a size to make determination difficult, and the series of each of the three species contains examples with fully worn teeth. The largest species, *G. carchinus*, has a skull-length of 33·5–35 mm. Following this we have

Graomys medius, sp. n.

Size less than in *G. carchinus*, greater than in the next species. Colour about as in *carchinus*, but there is rather less development of the buffy band along the sides. Under surface white, the hairs either wholly white or slaty at base, this character proving to be absolutely variable in all these species of *Graomys*. Tail rather shorter and less tufted than in *carchinus*.

Skull in all ways less developed than in *carchinus*, smaller, with shorter nasals, supraorbital edges sharply angular, but with less distinct beads than in *carchinus*; bullæ smaller.

Dimensions of the type :—

Head and body 124 mm.; tail 150; hind foot 27; ear 25.

Skull: greatest length 31·2; condylo-incisive length 28·5; zygomatic breadth 16·1; nasals 11·8; interorbital breadth 5·2; breadth of brain-case 14·2; palatilar length 14·1; palatal foramina 7; antero-posterior length of bulla on a line parallel with the middle axis of the skull 6·4; upper molar series 5·2.

Hab. (of type). Chumbicha, Catamarca. No specimens in the Otro Cerro collection.

Type. Adult male. B.M. no. 18.11.11.23. Original number 262. Collected 6th July, 1918, by E. Budin. Presented by Oldfield Thomas. Ten specimens examined.

Finally, the third and smallest species is represented by half a dozen specimens from Chumbicha; but as the oldest and best is in the Otro Cerro collection, it may be described as an integral part of the present paper, as follows:—]

8. *Graomys edithæ*, sp. n.

♂. 380.

Size again smaller than in *G. medius*, making it the smallest known species of the genus. Colour about as in that animal, a buffy wash on the sides rarely present. Under surface white, the hairs either slaty basally or white to their roots. Tail shorter than in *medius*, and less heavily haired terminally; brown above, white on sides and below.

Skull a miniature of that of the other species; supra-orbital edges without beading.

Dimensions of the type:—

Head and body 108 mm.; tail 127; hind foot 25; ear 20.

Skull: greatest length 28·5; condylo-incisive length 26·5; zygomatic breadth 15; nasals 10·5; interorbital breadth 4·5; breadth of brain-case 13·5; palatilar length 12·8; palatal foramina 6·7; length of bullæ 6; upper molar series 4·7.

Hab. (of type). Otro Cerro; other specimens from Chumbicha.

Type. Old male with worn teeth. B.M. no. 19.2.7.34. Original number 380. Collected 26th September, 1918. Eight specimens examined.

This interesting little *Graomys* agrees with the larger species in all the essential characters of the group, and by the study of the whole series I am strongly confirmed as to the advisability of recognizing *Graomys* as a genus distinct from *Phyllotis*, a point on which Mr. Osgood has expressed some doubt.

9. *Akodon simulator*, Thos.

♂. 326, 363, 377, 379, 381, 382; ♀. 322, 368, 369.

These specimens appear to agree absolutely with the type-series of *simulator* from Tucuman, and equally to differ from the *Chumbicha glaucinus*, to which they are geographically so much nearer.

10. *Akodon alterus*, sp. n.

♂. 325, 327, 353, 359.

Closely allied to *A. spegazzinii*, but drabby brown instead of buffy olive.

Size as in the allied species. General colour above drabby brown (between "buffy brown" and "Saccardo's umber" of Ridgway). Under surface dull soiled buffy throughout, the hairs broadly slaty at base, drabby or dull buffy terminally; hairs of inguinal region tipped with ochraceous. Ears coloured like head. Hands and feet dull drabby whitish; claws of normal development, the anterior slightly shorter than the posterior. Tail of moderate length, blackish above, dull whitish below, the two colours generally well contrasted.

Skull of the same narrow shape and with the same little swollen brain-case as in *A. spegazzinii*, this narrowness of skull distinguishing the two species from the members of the *arenicola* group. Zygomatic plate well projected forward, its anterior edge often tending to be slightly concave. Palatal foramina very long, reaching to the level of the second re-entrant angle on the inner side of m^1 . Bullæ of normal size.

Molars narrow, early worn down, those of the youngest specimen too worn to say if a definite anterior notch is or is not present on m^1 .

Dimensions of the type:—

Head and body 83 mm.; tail 68; hind foot 20; ear 14.

Skull: greatest length 25; condylo-incisive length 23.5; zygomatic breadth 12.6; nasals 9.4; interorbital breadth 4.6; breadth of brain-case 11; palatilar length 10.4; palatal foramina 6.3; postforaminal palate 2.9; upper molar series 4.3.

Hab. (of type) as above. Other specimens from Chumbicha.

Type. Adult male. B.M. no. 19.2.7.44. Original number 359. Collected 6th September, 1918.

A. spegazzinii was described on a specimen from Cachi skinned out of spirit, and the coloration therefore could not

have been trusted for purposes of distinction. But fortunately a topotype skin has since been received, and this is of the same buffy olive colour as the specimens from Potosi referred to that species in 1902*.

A. alterus is readily distinguishable from the older-known species by the absence of the strong yellowish or buffy suffusion in the fur.

No. 228, from Chumbichia, erroneously referred to *A. arenicola* in my previous paper, also proves to belong to this species, while an additional specimen, no. 317, has also come from that locality.

11. *Akodon orbis*, sp. n.

♀. 324.

A proodont *Akodon* allied to *A. lactens*.

General characters very much as in *A. lactens*, the colour practically the same except that there is no white patch on the chin. The tone is slightly duller and more drabby, but the difference amounts to little. Ears slightly shorter, coloured like the head. Fore-claws similarly elongated, as long as those of the hind feet. Tail blackish above, dull drabby on sides and below, the difference but little marked.

Skull of lighter build, with markedly narrower muzzle than in *lactens*. Upper outline more bowed. Brain-case smooth, unridged.

Incisors similarly thrown forward (proodont), the incisive angle of the type 86° ; they are light-coloured, as in *A. lactens*, but are distinctly more slender in a specimen as old as or older than the type of that animal. Molars rather narrower, of similarly high solid structure.

Dimensions of the type:—

Head and body 97 mm.; tail 59; hind foot 21; ear 14.

Skull: greatest length (bone only) 26.4; condylo-incisive length 25.2; zygomatic breadth 14.6; breadth of muzzle 4.2; nasals 9.1; interorbital breadth 5; breadth of brain-case 12; palatine foramina 6.4; postforaminal palate 4; upper molar series 4.8.

Type. Old female. B.M. no. 19. 2. 7. 45. Original number 324. Collected 21st August, 1918.

This species is evidently closely related to *A. lactens*, discovered by Sr. Budin at Leon, Jujuy, but differs by its markedly more slenderly built muzzle, thinner incisors, and

* Ann. & Mag. Nat. Hist. (7) ix. p. 226 (1902).

by the absence of the prominent white patch on the chin, a character generally fairly constant.

The two species form rather a special group of the genus, but without specimens with less worn dentition it is difficult to make sure of their true relationship.

12. *Ctenomys knighti*, sp. n.

♂. 336, 338, 357; ♀. 328, 332, 335, 339, 340, 341, 345, 360, 362.

Allied to *C. budini*, Thos., of Jujuy.

Size about as in *budini*, the skulls of the males a little larger than male *budini*, but the females about the same. Colour above nearly as in that animal, or a little darker, rather paler than "Mars brown"; flanks, especially posteriorly, distinctly clearer buffy, no such clearing of the general grizzled colour being present in *budini*; under surface uniform, without collar across throat, the whole distinctly more ochraceous than in *budini*, the ends of the hairs "cinnamon-buff" or "pinkish cinnamon." Muzzle, both on top and sides of nose and tip of chin, blackish—no darkening being present in *budini*. Tail slightly longer than in *budini*, the longest in four specimens of that species 70 mm., while in *knighti* it ranges from 73 to 84 mm.

Skull of about the same general shape as in *budini*, or slightly more elongate, nasals rather narrower. Parietal region without trace of separate interparietals, even in the youngest specimen, these bones being present in all four examples of *budini*. Palatine foramina longer, in a groove leading forward and enclosing the incisive fissures; in *budini* the foramina end abruptly on the general surface of the palate and the fissures are quite distinct from them. Bulæ of the same general shape, but rather larger, and, as viewed from behind, their smooth postero-superior portion is much more conspicuous owing to its being less covered over by the plastering bones of the occipital series.

Teeth as in *C. budini*, except that *m*³ has a more obliquely elongate section at all ages.

Dimensions of the type (male) and of an adult female (no. 340):—

Head and body 203, 180 mm.; tail 82, 74; hind foot 36, 30; ear 7, 7.

Skull: greatest median length 49·5, 44; condylo-incisive

length 50·5, 43; zygomatic breadth 30·2, 27; nasals 17·5, 14·7 × 8, 6·6; interorbital breadth 12, 9·8; least breadth across brain-case 19·8, 17·8; bi-mental breadth 31·3, 27; palatilar length 23·7, 20; length of bullæ 17, 15·2; upper tooth-series (alveoli) 11·1, 10, (crowns) 10, 9·6.

Type. Adult male. B.M. no. 19. 2. 7. 47. Original number 338. Collected 27th August, 1918.

This tuco-tuco is no doubt nearly allied to *C. budini*, but may be distinguished externally by its dark muzzle, more buffy sides, and absence of collar, and in the skull by the various details above described, and notably by the absence of a separate interparietal.

It is named in honour of Col. C. Morley Knight, by whom, in conjunction with his partner Col. J. J. Porteous, the explorations of Messrs. Kemp and Budin have been so much facilitated in various ways.

"Found on stony ground."—*E. B.*

13. *Lagidium lockwoodi*, sp. n.

♀. 333.

Size comparatively large, about as in *L. cuscus*.

General colour nearest to that of *L. cuscus*, of a similar deep grey colour, but not quite so dark; darker than in *L. tucumanum*. Dorsal dark line well defined, distinct, running from nape to rump. Under surface broadly washed with buffy ochraceous; no axillary white patches present. Feet grizzled grey, scarcely lighter terminally. Tail distinctly black along its under surface, its long crest mixed black and dull buffy whitish, the end black.

Skull decidedly larger than in *L. tucumanum*, the only species geographically near; muzzle larger; nasals little inflated anteriorly, and owing to the great breadth of the premaxillaries the latter are visible outside them from above. Bony islet above meatus fairly large, nearly square; oblong transversely in *tucumanum*. Posterior line of occiput almost straight transversely, scarcely bulging backwards in the centre, as it does markedly in every specimen of *tucumanum*. Incisive fissure unusually large and open, 2 mm. in breadth. Palatal foramina also widely open posteriorly, in decided contrast with those of *tucumanum*. Bullæ much larger than in the Tucuman species.

Incisors yellow in front, unusually large, and heavier,

thicker and more strongly curved than in any other member of the genus, the incisive angle 83° . Molars broad and heavy, the series more bowed out mesially than in other species.

Dimensions of the type:—

Head and body 400 mm.; tail 350; hind foot 95; ear 74.

Skull: greatest length 88.5; condylo-incisive length 81; zygomatic breadth 46.5; nasals 32.7×11.3 ; suprameatal islet 6×6 ; palatal foramina 15.5×4.6 ; diameter of bullæ at right angles to their longest axis 13; upper tooth-series, length (alveoli) 20, greatest breadth across the two series 22; breadth of m^1 on lamina, 5.6.

Type. Adult female (basilar suture closed, but its position perceptible). B.M. no. 19.2.7.57. Original number 333. Collected 24th August, 1918.

The members of this genus appear to be more constant in their skull-characters than has been supposed, and I find that five adult skulls of *L. tucumanum* agree closely among themselves and equally differ from the present specimen in the characters above referred to. *L. cuscus*, from Bolivia, more distant in locality, has a skull rather more similar to that of *L. lockwoodi*, but has smaller bullæ and no tendency towards the abnormally heavy incisors of the new form.

Philippi's *L. crassidens*, without locality, named incidentally in his description of *L. lutescens* * (itself apparently referable to *L. cuvieri*), would appear to be the ordinary Chilean form *L. viscaccia*, Mol., and is certainly not *L. lockwoodi*, as the visibility from below of the nasals outside the premaxillæ is especially insisted on, this being in distinct contrast to the conditions in *L. lockwoodi*, while it is not infrequently found in *L. viscaccia*.

In naming this fine mountain chinchilla after Mr. Charles Lockwood I may again refer with gratitude to the great assistance he has been in arranging all the financial and business details of the Budin expedition, an assistance without which we should have found great difficulty in carrying it out.

14. *Galea* sp.

♂. 358 (immature).

* Ann. Mus. Chili, pt. 13, p. 8 (1896).

